UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

OCT 01 1993

REPLY TO THE ATTENTION OF:
WD-17J

Mr. Paul Choinski
Facility Manager
Detroit Coke Corporation
P.O. Box 09229
Detroit, Michigan 48209

Re: Draft Response to Comments on Modifications to United States Environmental Protection Agency (USEPA) Permits #MI-163-1W-0003, #MI-163-1W-0004 and #MI-163-1W-0005

Dear Mr. Choinski:

The Region 5 Underground Injection Control (UIC) Section has prepared the enclosed draft Response to Comments on the draft modified permits for the three injection wells located at your facility. As you will notice, the draft Response to Comments requests that further information be submitted on the past operation of some solid waste management units (SWMUs) before decisions on whether to include those SWMUs in the Release Assessment can be made.

In addition, as per your phone conversation of September 30, 1993, with Allen Melcer of my staff, we request a tour of the Toledo Coke facility on the morning of October 13, 1993, in order to help us determine how SWMUs are operated during coking operations. USEPA also plans a site visit at the Detroit Coke facility on the afternoon of October 13, 1993, and possibly on the 14th as well. This site visit is to assess the progress made thus far in managing the SWMUs identified in the draft permit modifications, and to give you an opportunity to discuss the draft Response to Comments with USEPA staff.

Mr. Melcer will be in contact with you to coordinate the site visits. If you have any questions, please contact Allen Melcer at (312) 886-1498.

Sincerely yours,

Richard J. Zdanowicz, Chief
Underground Injection Control Section

Enclosure

bcc: Greg Rudloff, RCRA Permitting Branch, Michigan Section (HRPM-8J)

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77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

JUN 16 1993

REPLY TO THE ATTENTION OF:

WD-17J

CERTIFIED MAIL P 664 397 618
RETURN RECEIPT REQUESTED

Mr. Paul Choinski
Facility Manager
Detroit Coke Corporation
P.O. Box 09229
Detroit, Michigan 48209

Re: Receipt of Comments on Draft Permits MI-163-1W-0003, MI-163-1W-0004 and MI-163-1W-0005

Dear Mr. Choinski:

The Region 5 Underground Injection Control (UIC) Section has received your comments on the draft modified permits for the three injection wells located at your facility. The comments were received during the public notice period for the draft permit modifications and therefore will be included in the public record for this draft decision. Technical staff from the UIC and Resource Conservation and Recovery Act (RCRA) programs are currently reviewing your submittal.

We look forward to meeting with you and your consultants to discuss the comments on June 16, 1993, at 10:30 a.m. in Room 815, 8th floor, 77 W. Jackson. If you have any questions, please contact Allen Melcer of my staff at (312) 886-1498.

Sincerely yours,

Richard J. Zdanowicz

Richard J. Zdanowicz, Chief
Underground Injection Control Section

bcc: Greg Rudloff, RCRA Permitting Branch, Michigan Section (HRPM-8J)

WD-17J:A.Melcer:am:6/2/93:F"Dcntrl.18
UIC Control #18: Due 6/18/93

COMMENTS ON DRAFT PERMITS

DETROIT COKE CORPORATION
UIC PERMIT NOS. MI-163-1W-0003, MI-163-IW-0004, MI-163-1W-0005

1. Section Citation Part I.B.1./Page No. 1 of 18[1]

   Current Language - "Hereinafter the Director, may, for cause or upon request from the Permittee...."

   Proposed New Language - Identical.

   Rationale for the Change - Detroit Coke Corporation (Detroit Coke) wishes to retain this language to provide flexibility for operations.

2. Section Citation Part I.E.9.(a)/Page No. 4 of 18

   Current Language - "...for a period of at least five (5) years from the date of the sample..."

   Proposed New Language - "...for a period of at least three (3) years from the date of the sample..."

   Rationale for the Change - Consistency with the regulations.

3. Section Citation Part I.E.9.(b)/Page No. 5 of 18

   Current Language - "...for a period of at least five (5) years from the date the application was signed."

   Proposed New Language - "...for a period of at least three (3) years from the date the application was signed."

   Rationale for the Change - Consistency with the regulations contained in 40 Code of Federal Regulations (CFR) 144.31(f).

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[1]Although all three permits contain identical language, they do not have identical page breaks. These page numbers refer to Permit No. MI-163-1W-0003.

4. Section Citation Part I.E.10./Page No. 5 of 18

Current Language - "...intervals contained in Part II(D)(1) through (4)..."

Proposed New Language - "...intervals contained in Part II(D)(1) through (3)..."

Rationale for the Change - Consistency within the permit.

5. Section Citation Part I.H.2.(a)/Page No. 10 of 18

Current Language - "...in accordance with 40 CFR 146.8(a)(1) at least..."

Proposed New Language - "...in accordance with 40 CFR 146.8(b)(2) at least..."

Rationale for the Change - Proper regulatory citation.

6. Section Citation Part I.J.2./Page No. 12 of 18

Current Language - "A plan for corrective action under 40 CFR 146.64 is not necessary at this time..."

Proposed New Language - Identical.

Rationale for the Change - Detroit Coke agrees that a plan for corrective action is not necessary at this time.

7. Section Citation Part II.D.1./Page No. 16 of 18

Current Language - "The permittee shall submit monthly reports of the following information."

Proposed New Language - "The permittee shall submit monthly reports of the following information for those months when injection occurs."

Rationale for the Change - If injection does not occur in any particular month, these data will not be available.

8. Section Citation Part II.D.1(b)/Page No. 16 of 18

Current Language - "Daily average and monthly average values for injection pressure, flow rate and volume, and annulus pressure, and daily values and monthly average values for sight glass level."

Proposed New Language - "Daily average and monthly average values for injection pressure, flow rate and volume, and annulus pressure, and daily values and monthly average values for sight glass level. Daily sampling need not occur if no injection occurs."

Rationale for the Change - If injection does not occur on any particular day, these data will not be available.

9. Section Citation Part II.D.1.(c)/Page No. 16 of 18

Current Language - "Daily maximum and minimum values for injection pressure, injection volume, flow rate, and annulus pressure."

Proposed New Language - "Daily maximum and minimum values for injection pressure, injection volume, flow rate, and annulus pressure. Daily sampling need not occur if no injection occurs."

Rationale for the Change - If injection does not occur on any particular day, these data will not be available.

COMMENTS ON ATTACHMENT D
SOURCE AND ANALYSIS OF WASTE

10. Section Citation Attachment D/Page No. D-2 of 7

Current Language - "The permittee is permitted to inject rainwater that collects on site and waste ammonia liqour produced from coking operations conducted by Detroit Coke Corporation, Detroit, Michigan."

Proposed New Language - "The permittee is permitted to inject rainwater that collects on site and waste ammonia liquor produced from coking operations."

Rationale for the Change - The requested change will allow for operational flexibility and there are no changes proposed in the chemical characteristics of fluids injected.

COMMENTS ON ATTACHMENT E
CONTINUING RELEASES/CORRECTIVE ACTION

11. Section Citation Attachment E.A.(1)/Page No. 2 of 10

Current Language - "Facility - All contiguous land, structures, and other appurtenances and improvements on the land used for treating, storing, or disposing of hazardous wastes. It includes the entire site that is under the control of the owner or operator engaged in hazardous waste management."

Proposed New Language - *"Facility* is defined as (1) All contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (e.g., one or more landfills, surface impoundments, or combinations of them). (2) For the purpose of implementing corrective action under §264.101, all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA."

Rationale for the Change - The requested change will make the definition consistent with that contained in the Final Rule published February 16, 1993.

12. Section Citation Attachment E.A.(3)/Page No. 2 of 10

Current Language - "Releases - Discussed in the Preamble to the Codification Rule, includes any concentration of an Appendix VIII constituent in excess of ground water protection standards where such constituent has emanated from a SWMU. Releases to the air and surface water are also included. Region V staff believes that releases should be defined at least as broadly as the term is defined in CERCLA."

Proposed New Language - *"Release* means any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes (including hazardous constituents) into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous wastes or hazardous constituents)."

Rationale for the Change - The requested new language has been proposed by EPA in 57 Federal Register (FR) 30798, July 27, 1990; this proposed definition does include language borrowed from the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

13. Section Citation Attachment E.A.(4)/Page No. 2 of 10

Current Language - "SWMU - Any contiguous land, structures, other appurtenances, and improvements on the land used for storage, treatment, disposal, collection, source separation, transfer, processing, resource recovery or conservation of any solid waste (as defined in 40 CFR 261.2). It includes any unit at the facility from which hazardous constituents might migrate, irrespective of whether the units were intended for the management of solid and/or hazardous wastes."

Proposed New Language - "*Solid Waste Management Unit* means any discernible unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes have been routinely and systematically released."

Rationale for the Change - The requested new language has been proposed by EPA in 57 Federal Register (FR) 30798, July 27, 1990.

14. Section Citation Attachment E.D./Page No. 3 of 10

Current Language - This section lists the 21 SWMUs and 11 AOCs originally identified by Detroit Coke.

Proposed New Language - Language for this section is to be negotiated; however, SWMUs 7 through 9 and AOCs 6 and 9 have been eliminated from consideration for corrective action per mutual agreement.

Rationale for the Change - Detroit Coke does not want units that did not manage solid waste identified as SWMUs in the permit. The list of SWMUs originally identified by Detroit Coke in September 1991, and described in EPA's RFA were not identified based upon a full understanding of applicable regulations. Detroit Coke has provided additional clarifying information for each unit originally identified in Attachment 1 and requests discussion with EPA regarding these units.

15. Section Citation Attachment E.F./Page No. 5 of 10

Current Language - "The Permittee shall submit a written RCRA Facility Investigation Work Plan."

Proposed New Language - "The Permittee shall submit a written RCRA Facility Investigation Release Assessment Work Plan."

Rationale for the Change - Consistency throughout the permit and its attachments. This change reflects Attachment F (Page 6 of 49); EPA recognizes in this Attachment that an RFI release assessment occurs prior to an RFI.

16. Section Citation Attachment E.G.1./Page No. 5 of 10

Current Language - "RCRA Facility Investigation (RFI)"

Proposed New Language - "RCRA Facility Investigation (RFI) Release Assessment"

Rationale for the Change - Consistency throughout the permit and its attachments. RFI should be replaced with RFI Release Assessment throughout this Section.

17. Section Citation Attachment E.G.1./Page No. 5 of 10

Current Language - "The Permittee shall conduct an RFI to evaluate thoroughly the nature and extent of the release of hazardous waste(s) and hazardous constituent(s) from all applicable SWMUs identified in Condition B above."

Proposed New Language - "The Permittee shall conduct an RFI Release Assessment to document the absence or presence of hazardous waste or hazardous constituents at all Solid Waste Management Units identified as requiring further investigation."

Rationale for the Change - Consistency with the intent of an RFI Release Assessment and with the results of the RCRA Facility Assessment (RFA).

18. Section Citation Attachment E.G.1.a. through c./Page No. 6 of 10

Current Language - "RFI"

Proposed New Language - "RFI Release Assessment"

Rationale for the Change - Consistency throughout the permit and its attachments and the concept of the RFI Release Assessment proceeding prior to an RFI.

19. Section Citation Attachment E.G.1.c./Page No. 6 of 10

Current Language - "The Final Report must contain adequate information to support further corrective action decisions at the facility."

Proposed New Language - "The Final Report must contain adequate information to support further corrective action decisions at the facility, including the Permittee's recommendations for an RFI, if any."

Rationale for the Change - Clarification.

20. Section Citation Attachment E.G.2.a./Page No. 6 and 7 of 10

Current Language - "RFI."

Proposed New Language - "RFI Release Assessment."

Rationale for the Change - Consistency throughout the permit and its attachments.

21. Section Citation Attachment E.G.2.a./Page No. 6 and 7 of 10

Current Language - "This permit modification must conclusively demonstrate that there are no releases of hazardous waste(s) including hazardous constituents, from SWMUs at the facility that pose a threat to human health and the environment.

If, based upon review of the Permittee's request for a permit modification, the results of the completed RFI, and other information, including comments received during the 60-day public comment period required for Class III permit modifications, the Regional Administrator determines that releases or suspected releases which were investigated either are nonexistent or do not a pose a threat to human health or the environment, the Regional Administrator will grant the requested modification."

Proposed New Language - "This permit modification must demonstrate that there are no releases of hazardous wastes (including hazardous constituents) from solid waste management units at the facility that may pose a threat to human health or the environment.

If, based upon review of the Permittee's request for a permit modification, the results of the RFI Release Assessment, the RFI, reports submitted under the Corrective Action Program, or other information, including comments received during the 60-day public comment period required for Class III permit modifications, the Regional Administrator determines that there is no such threat to human health and the environment from releases from solid waste management units at the facility, the Regional Administrator shall grant the permit modification."

Rationale for the Change - Consistency with the proposed regulations.

22. Section Citation Attachment E.G.2.b./Page No. 7 of 10

Current Language - "A determination of no further action shall not preclude the Regional Administrator from requiring continued or periodic monitoring of air, soil, ground water, or surface water, if necessary to protect human health and the environment, when site-specific circumstances indicate that potential or actual releases of hazardous waste(s) including hazardous constituents are likely to occur."

Proposed New Language - "A determination of no further action shall not preclude the Regional Administrator from requiring the Permittee to perform such investigations and studies as may be necessary to comply with the corrective action requirements, if new information or subsequent analysis indicates that there are, or are likely to be, releases from solid waste management units at the facility that may pose a threat to human health or the environment; or require continued or periodic monitoring under the terms of the permit if the Regional Administrator determines, based on site-specific circumstances, that releases are likely to occur."

Rationale for the Change - Paragraph E.G.2.b. and c. as currently written are not entirely consistent with the proposed regulations.

23. Section Citation Attachment E.G.2.c./Page No. 7 of 10

Current Language - "A determination of no further action shall not preclude the Regional Administrator from requiring further investigations, studies, or remediation at a later date, if new information or subsequent analysis indicates that a release or likelihood of a release from a SWMU at the facility is likely to pose a threat to human health or the environment. In such a case, the Regional Administrator shall initiate a modification to the Corrective Action Schedule of Compliance to rescind the determination made in accordance with Condition G.2.a. Additionally, the Regional Administrator may determine that there is insufficient information on which to base a determination, and may require the Permittee to perform additional investigations as needed to generate the needed information."

Proposed New Language - "A determination of no further action shall not preclude the Regional Administrator from requiring, at a later date, further investigations and studies as may be necessary to comply with the corrective action requirements defined in Attachment E Condition B of this permit, if new information or subsequent analysis indicates that a release or likelihood of release from a SWMU is likely to pose a threat to human health or the environment."

Rationale for the Change - Consistency with the proposed regulations.

24. Section Citation Attachment E.G.3. (as renumbered)/Page No. 8 of 10

Current Language - Describes the Corrective Measures Study (CMS).

Proposed New Language - Specific to an RFI because the previous section was modified to specify an RFI Release Assessment. The corrective measures portion is moved to E.G.4 and an entire new section regarding an RFI is added as follows:

3. Within 120 calendar days of receipt of EPA's approval of the RFI Release Assessment Final Report recommending an RFI, the Permittee shall submit to EPA for approval, an RFI Work Plan for the applicable Solid Waste Management Units. The Permittee may propose to perform the RFI in stages or to investigate Solid Waste Management Units as Corrective Action Management Units. The Permittee shall demonstrate in the RFI Work Plan that conducting the RFI in stages or investigating Corrective Action Management Units will expedite the process or otherwise augment protection of human health or the environment. The major tasks and required submittal dates are shown below. Additional tasks and associated submittal dates may also be specified in the Schedule of Compliance found in Attachment H of this permit. The scope of work for each of the tasks is found in Attachment F (Corrective Action Plan Scope of Work).

   a. RFI Workplan - The Permittee shall submit a written RFI Workplan to the Regional Administrator within 120 days after receiving EPA's approval of the RFI Release Assessment Final Report.

      The Regional Administrator will approve, modify and approve, or disapprove, and provide comments on the Workplan in writing to the Permittee. Within 60 days of receipt of such comments, the Permittee must modify the Workplan, so as to reflect the changes required in the Regional Administrator's comments, or submit a new workplan for the Regional Administrator's approval.

   b. RFI Implementation - Within 30 days of the Regional Administrator's written approval of the RFI Workplan, the Permittee shall implement the RFI Workplan according to the terms and schedule in the approved RFI Workplan.

   c. RFI Final Report - Within 60 days after the completion of the RFI, the Permittee shall submit an RFI Final Report to the Regional Administrator. The RFI Final Report shall describe the procedures, methods, and results of the RFI. The Final Report must contain adequate information to support further corrective action decisions at the facility including the Permittee's recommendations for a Corrective Measures Study, if any. After the Permittee submits the RFI Final Report, the Regional Administrator shall either approve or disapprove the Report in writing. If the Regional Administrator disapproves the Report, the Regional Administrator shall notify the Permittee in writing of the deficiencies and specify a due date for submittal of a revised Report.

Rationale for the Change - Providing consistency throughout the permit and its attachments and allowing for a logical progression from an RFI Release Assessment to an RFI then to a CMS.

25. Section Citation Attachment E.G.4.a. (as renumbered)/Page No. 8 of 10

Current Language - "The Permittee shall submit a written CMS Plan..."

Proposed New Language - "The Permittee shall submit a written CMS Work Plan (Plan)..."

Rationale for the Change - Consistency throughout the permit and its attachments.

26. Section Citation Attachment E.G.4.c. (as renumbered)/Page No. 9 of 10

Current Language - "The CMS Final Report shall summarize the results of investigations for each remedy studied and must include an evaluation of each remedial alternative."

Proposed New Language - "The CMS Final Report shall summarize the results of the investigation for each remedy studied, include an evaluation of each remedial alternative, and present the Permittee's recommendations for corrective measures."

Rationale for the Change - Clarification and provision for input by Detroit Coke.

27. Section Citation Attachment E.G.4./Page No. 9 of 10

Current Language - This section regarding Corrective Measures Implementation (CMI) should be renumbered.

Proposed New Language - E.G.5.

Rationale for the Change - Renumbering to allow for the insertion of RFI specific requirements.

28. Section Citation Attachment E.G.5. (as renumbered from E.G.4.)/Page No. 9 of 10

Current Language - "The Regional Administrator's selection will be based on performance, reliability, implementability, safety, and human health and environmental impact of the measure or measures."

Proposed New Language - "The Regional Administrator's selection, except as otherwise provided for conditional remedies, will be based upon long-term reliability and effectiveness; reduction of toxicity, mobility, or volume; short-term effectiveness of a potential remedy(s); implementability; cost. The Regional Administrator may select a conditional remedy that protects human health and the environment under plausible exposure conditions during the term of the permit."

Rationale for the Change - Consistency with the proposed regulations and recognition that in some circumstances conditional remedies may be selected.

COMMENTS ON ATTACHMENT F
CORRECTIVE ACTION SCOPE OF WORK

29. Section Citation Attachment F.I.A.1./Page No. 2 of 49

Current Language - "The Project Management Plan shall evaluate each SWMU based on its actual or potential threat to human health and the environment and prioritize the investigatory and/or remedial activities accordingly. The Project Management Plan shall also include a description of qualifications of personnel performing or directing the RFI Release Assessment, including Contractor personnel."

Proposed New Language - Delete once.

Rationale for the Change - These two sentences appear twice in a row in this section and are duplicative.

30. Section Citation Attachment F.I.A.6./Page No. 6 of 49

Current Language - "The Report shall describe the contamination (qualitative/quantitative) in relation to background levels indicative of the area."

Proposed New Language - "The Report shall describe the contamination (qualitative/ quantitative) in relation to background levels indicative of the area and in relation to potentially applicable 'action levels' and 'media cleanup standards'."

Rationale for the Change - Consistency with the proposed regulations and acknowledgement that background values for all constituents might not be available. Furthermore, the facility is located in a highly industrialized area and media cleanup standards should be based upon plausible future uses.

31. Section Citation Attachment F.I.A.7./Page No. 6 of 49

Current Language - "the Permittee shall provide recommendations on which solid waste management units require further investigation"

Proposed New Language - Identical.

Rationale for the Change - Detroit Coke wishes to keep this language in Attachment F and recommend which SWMUs require further investigation.

✓32. Section Citation Attachment F.I.B./Page No. 6 of 49

Current Language - "The Permittee shall prepare an RFI Work Plan."

Proposed New Language - "Within 120 calendar days of receipt of EPA's approval of the RFI Release Assessment Final Report recommending an RFI, the Permittee shall submit to EPA, for approval, an RFI Work Plan for the applicable solid waste management units."

Rationale for the Change - Consistency throughout the permit and its attachments allowing for logical progression from an RFI Release Assessment to an RFI.

✓33. Section Citation Attachment F.I.B.2.b/Page No. 9 of 49

Current Language - "...to facilitate the evaluation and selection of the final corrective measure(s), if any."

Proposed New Language - Identical.

Rationale for the Change - Detroit Coke wishes to keep the flexibility to allow final corrective measures to be equal to interim measures, if any, or alternatively allow the final corrective measures to be no action.

✓34. Section Citation Attachment F.I.B.4.a.(1)/Page No. 11 of 49

Current Language - "This program shall provide the following information, as appropriate:"

Proposed New Language - Identical.

Rationale for the Change - Detroit Coke is gratified to see that EPA recognizes certain information may not be appropriate in determining the hydrogeology of the site and requests that the language be retained.

✓35. Section Citation Attachment F.I.B.4.a.(2)/Page No. 13 of 49

Current Language - "Such characterization shall consider, but not be limited to, the following information, as appropriate:"

Proposed New Language - Identical.

Rationale for the Change - Detroit Coke requests that this language be retained to allow for flexibility in evaluating soils at the site.

✓36. Section Citation Attachment F.I.B.4.a.(3)/Page No. 14 of 49

Current Language - "Such characterization shall include, but not be limited to, the following activities and information:"

Proposed New Language - "Such characterization shall include, but not be limited to, the following activities and information, as appropriate:"

Rationale for the Change - Consistency with other investigation requirements to perform appropriate investigations.

✓37. Section Citation Attachment F.I.B.4.a.(4)/Page No. 15 of 49

Current Language - "Such information shall include, but not be limited to, as appropriate:"

Proposed New Language - Identical.

Rationale for the Change - Detroit Coke wishes to maintain this language to allow for flexibility in characterizing the climate in the vicinity of the facility.

38. Section Citation Attachment F.I.B.4.b.(2)(b)/Page No. 17 of 49

Current Language - "Physical and chemical characteristics;"

Proposed New Language - "Physical and chemical characteristics, as available;"

Rationale for the Change - All the identified physical and chemical characteristics listed in this section may not be available for wastes in the solid waste management unit.

39. Section Citation Attachment F.I.B.4.b.(2)(c)/Page No. 17 of 49

Current Language - "Migration and dispersal characteristics of the waste."

Proposed New Language - "Migration and dispersal characteristics of the waste, as available;"

Rationale for the Change - All the migration and dispersal characteristics of the waste previously disposed in SWMUs may not be available.

40. Section Citation Attachment F.I.B.4.c.(3)/Page No. 19 of 49

Current Language - "The Permittee shall conduct a surface water investigation to characterize contamination in surface water bodies resulting from contaminant releases at the facility."

Proposed New Language - "If the ground water and soil investigations described in (1) and (2) of this section indicate releases or threats of releases from SWMUs in levels such as may present a threat to human health and the environment in surface water, then the Permittee shall conduct a surface water investigation to characterize contamination in surface water bodies resulting from contaminant releases from SWMUs at the facility."

Rationale for the Change - Recognizing the ability to phase the program, a surface water sediment and contamination study should not be necessary until and unless the ground water and soil investigations indicate potential harm. Furthermore, surface water is regulated purusant to the Clean Water Act.

41. Section Citation Attachment F.I.B.4.c.(5)/Page No. 20 of 49

Current Language - "The Permittee shall conduct an investigation to characterize subsurface gases emitted from buried hazardous wastes and hazardous constituents in the ground water."

Proposed New Language - "As appropriate, the Permittee shall conduct an investigation to characterize subsurface gases emitted from buried hazardous wastes and hazardous constituents in the ground water."

Rationale for the Change - Recognizing that RFIs can be performed in phased fashion, a subsurface gas contamination study may not be necessary until and unless buried hazardous wastes are determined to be present at the facility or hazardous constituents are found in the ground water. Furthermore, only if such buried wastes or ground water contamination are likely to cause emissions of gases should a subsurface gas contamination investigation be undertaken.

✓42. Section Citation Attachment F.I.B.5.b.(3)/Page No. 24 of 49

Current Language - "Define the objectives (goal of the remedial activity)."

Proposed New Language - "Define the objectives (goal of the investigation)."

Rationale for the Change - The Quality Assurance Project Plan is specific to the RFI Release Assessment and the RFI, both of which are investigations, not remedial activities.

✓43. Section Citation Attachment F.I.B.5.b.(6)(b)/Page No. 30 of 49

Current Language - "Detailed procedures, criteria, or guidelines used for collecting background samples, if any."

Proposed New Language - Identical.

Rationale for the Change - Detroit Coke wishes to retain this flexible language.

✓44. Section Citation Attachment F.I.B.5.b.(6)(k)/Page No. 31 of 49

Current Language - "For ground and surface waters, both filtered and unfiltered..."

Proposed Language - "For ground and surface waters, as appropriate, filtered and unfiltered..."

Rationale for the Change - Clarification.

45. Section Citation Attachment F.I.B.6.d./Page No. 36 of 49

Current Language - "Identification of all relevant and applicable standards, including background values, for the protection of human health and the environment."

Proposed New Language - "Identification of all relevant and applicable standards, including background values, if available, for the protection of human health and the environment."

Rationale for the Change - Background values might not be available for all constituents. Furthermore, the facility is located in a highly industrialized area and media cleanup standards should be based upon plausible future uses.

✓46. Section Citation Attachment F.II.A./Page No. 38 of 49

Current Language - "If required under Permit Attachment E.G.3."

Proposed New Language - "If required under Permit Attachment E.G.4."

Rationale for the Change - Consistency with renumbering.

✓47. Section Citation Attachment F.II.A.2./Page No. 38 and 39 of 49

Current Language - "The Permittee's CMS Workplan shall propose site-specific target cleanup levels for the corrective measures. These target cleanup levels shall be based on information gathered during the RFI, from U.S. EPA guidance, the requirements of any applicable Federal standards for protection of human health and the environment.

The Permittee shall recommend final media cleanup standards when the final remedy is selected. If the media cleanup standards differ from the target cleanup levels, the Permittee shall document the reasons from recommendations of different standards."

Proposed New Language - Identical to current language.

Rationale for the Change - Detroit Coke wishes to maintain this permit language and retain the ability to recommend final media cleanup standards.

48. Section Citation Attachment F.II.A.4./Page No. 40 of 49

Current Language - "The Permittee's CMS Workplan shall identify the corrective measures alternative(s) based on the target cleanup levels and an analysis of available technologies. The Permittee shall rely on sound engineering practice to determine which of the previously identified technologies appear most suitable for the site. Technologies can be combined to form the overall corrective action alternative(s). The alternatives developed should represent a workable number of options that appear to adequately address all site problems and corrective action objectives. The Permittee shall document the reasons for excluding technologies that might be feasible alternatives."

Proposed New Language - "The Permittee's CMS Workplan shall identify the corrective measures alternative(s) based on the target cleanup levels and an analysis if available technologies. The Permittee shall rely on sound engineering practice to determine which of the previously identified technologies appear most suitable for the site. Technologies can be combined to form the overall corrective action alternative(s). The alternatives developed should represent a workable number of options that appear to adequately address all site problems and corrective action objectives; however, if a remedy is obvious and plausible for a particular solid waste management unit, only that most plausible and obvious remedy need be examined for that SWMU."

Rationale for the Change - Consistency with the proposed corrective action rules and recognition of known and plausible remedies.

COMMENTS ON ATTACHMENT H
CORRECTIVE ACTION SCHEDULE OF COMPLIANCE

✓49. Section Citation Attachment H.B.1./Page No. 2 of 5

Current Language - "RFI Work Plan for newly identified SWMUs and releases"

Proposed New Language - "RFI Release Assessment Work Plan for newly identified SWMUs and releases"

Rationale for the Change - Consistency throughout the permit and its attachments to allow for an RFI Release Assessment prior to an RFI.

✓50. Section Citation Attachment H.B.2.a./Page No. 2 of 5

Current Language - "RFI Work Plan"

Proposed New Language - "RFI Release Assessment Work Plan"

Rationale for the Change - This revision should be made four times on Page 2 of 5 to allow for consistency throughout the permit and its attachments.

✓51. Section Citation Attachment H.B.2.a./Page No. 2 of 5

Current Language - "Within 30 calendar days of receipt of Regional Administrator's comment(s)"

Proposed New Language - "Within 60 calendar days of receipt of Regional Administrator's comment(s)"

Rationale for the Change - Consistency throughout the permit and its attachments.

✓52. Section Citation Attachment H.B.2.a./Page No. 3 of 5

Current Language - "RFI Final Report"

Proposed New Language - "RFI Release Assessment Final Report"

Rationale for the Change - To provide for an RFI Release Assessment prior to an RFI and consistency throughout the permit and its attachments.

✓53. Section Citation Attachment H.B.2.a./Page No. 3 of 5

Current Language - "Within 60 calendar days after the completion of the RFI"

Proposed New Language - "Within 60 calendar days after the completion of the RFI Release Assessment"

Rationale for the Change - To provide for an RFI Release Assessment prior to an RFI and consistency throughout the permit and its attachments.

✓54. Section Citation Attachment H.B.2.a./Page No. 3 of 5

Current Language - "Progress reports on RFI activities"

Proposed New Language - "Progress reports on RFI Release Assessment activities"

Rationale for the Change - To provide for an RFI Release Assessment prior to an RFI and consistency throughout the permit and its attachments.

✓55. Section Citation Attachment H.B.2.b./Page No. 3 of 5

Current Language - The Corrective Measures Study should be renumbered to H.B.2.c. and the RFI activities inserted in its place.

Proposed New Language -

Facility Submission - RFI Workplan. Due Date - Within 120 calendar days after receipt of EPA's approval of the RFI Release Assessment Final Report.

Facility Submission - Submit revised/modified RFI Workplan. Due Date - Within 60 calendar days of receipt of Regional Administrator's comment(s).

Facility Submission - Implementation of the RFI Workplan. Due Date - Within 30 calendar days of the Regional Administrator's written approval of the RFI Workplan.

Facility Submission - RFI Final Report. Due Date - Within 60 calendar days after the completion of the RFI.

Facility Submission - Progress reports on RFI activities. Due Date - Submitted bimonthly.

Rationale for the Change - Consistency throughout the permit and its attachments allowing for an RFI Release Assessment then an RFI.

✓56. Section Citation Attachment H.B.2.c. (as renumbered)/Page No. 3 of 5

Current Language - "Within 30 calendar days of receipt of Regional Administrator's comment(s)"

Proposed New Language - "Within 60 calendar days of receipt of Regional Administrator's comment(s)"

Rationale for the Change - Consistency throughout the permit and its attachments.

✓57. Section Citation Attachment H.B.2.d. (as renumbered)/Page No. 3 of 5

Current Language - "Within 30 calendar days of receipt of Regional Administrator's comment(s)"

Proposed New Language - "Within 60 calendar days of receipt of Regional Administrator's comment(s)"

Rationale for the Change - Consistency throughout the permit and its attachments.

✓58. Section Citation Attachment H.B.2.d. (as renumbered)/Page No. 4 of 5

Current Language - "Within 30 days of receipt of Regional Administrator's comments on Draft Construction Quality Assurance Plan"

Proposed New Language - "Within 60 days of receipt of Regional Administrator's comments on Draft Construction Quality Assurance Plan"

Rationale for the Change - Consistency throughout the permit and its attachments.

✓59. Section Citation Attachment H.B.2.d. (as renumbered)/Page No. 4 of 5

Current Language - "Within 30 days of receipt of comments from the Regional Administrator on Draft CMI Report"

Proposed New Language - "Within 60 days of receipt of comments form the Regional Administrator on Draft CMI Report"

Rationale for the Change - Consistency throughout the permit and its attachments.

ATTACHMENT 1

SOLID WASTE MANAGEMENT UNIT INFORMATION

SOLID WASTE MANAGEMENT UNIT (SWMU) NO. 1

SWMU Name: Oil Pump Spray Storage Area

Unit Description: This unit consisted of a 6,000-gallon aboveground storage tank (AST) with a secondary containment structure made of concrete, including 4 feet high containment walls. This tank contained different types of fuel oils at various times, including No. 2 fuel oil. These oils were used to control the bulk density of the coal mix; oil was sprayed directly on the coal prior to entering the charging bin. The unit was used from the mid 1980s to 1991. No solid waste was managed in this unit.

Prior to the AST, an underground storage tank (UST) was used at this location. The UST was filled with sand after being emptied.

Potential for Release: There is no historical information indicating a release. Hairline cracks were observed in July 1992 by U.S. Environmental Protection Agency (EPA) in the containment walls. Spillage was also reported by Detroit Coke representatives around the perimeter of the dike, near the loading area for the tank. EPA reported that a sheen and balls of tar were observed floating in water within the containment, and that staining of the concrete walls was observed on the interior and exterior surfaces. The balls of tar were later identified by Detroit Coke as oil agglomerated with coal fines, and the staining was attributed to the nature of the coking process and would be found in the majority of the containment areas. No samples were collected when the AST was removed from service.

Interim Measures: After the coke plant closed in September 1991, the tank was cut up and sold as scrap, the fuel was reclaimed and used at another coking facility, and the sediment was disposed at a RCRA Treatment, Storage, and Disposal (TSD) facility. The water in the secondary containment structure was transferred to Tank No. 3. Coal fines were removed from the containment area and sold as fuel for a cement kiln.

Rationale for SWMU Determination: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264, Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S).

There are no indications of a "routine and systematic" release from this unit.

Need for Inclusion in RFI Release Assessment: Because solid waste was not managed in this unit and any release from this unit was as a result of "passive" leakage, and because interim measures, including removal of the tank, cleaning of the containment area, and disposal or reclamation of the remaining sediment, fuel, and water, have been completed, it is not appropriate to include this unit in the RFI Release Assessment.

SWMU NO. 2

Unit Name: Coal Fines Recovery Basin and Coal Tar Recycling Area (formerly SWMU No. 14)

Unit Description: The Coal Fines Recovery Basin was used to accumulate coal fines from the charging of the coal Tek Pre-heater unit. The unit consisted of two separate concrete basins, each approximately 10 x 30 x 15 feet deep. Coal fines from the unit were reclaimed and reused in the coking process. The unit has been idle since the late 1970s.

The Coal Tar Recycling Area consists of a 40- by 50-foot curbed, concrete pad. The pad is sloped towards the Coal Fines Recovery Basin. The unit was primarily used for recycling coal fines when the preheat unit, double collector main, over the top main, or charging main was utilized. The excess coal fines that were collected in the charging main were conveyed by pipeline to the Coal Fines Recovery Basin. The excess water that was collected was pumped back to the by-products area for recycling or transferred to Tank No. 3. The coal fines were taken out of the basin by means of a clam bucket crane and transferred on the concrete pad for dewatering. The coal was then recycled back to the coke oven. Some recycling of K087 waste was performed on this pad. Recycling was accomplished by mixing decanter tank tar sludge (K087) with coal, and charging this mixture back into the coke battery. The pad was contained by a 12-inch high concrete wall.

Potential for Release: There is no historical information indicating a release from the Coal Fines Recovery Basin. In July 1992, EPA noted that the condition of the concrete in the basin was poor and that it was stained. Coal tar and a sheen was observed by EPA in the containment structure.

The surface of the concrete in the Coal Tar Recycling Area was also stained. A sample of tar was taken from the pad and tested not hazardous for TC. The containment wall was observed in July 1992 by EPA and reported in poor condition and broken in several places. Staining in both areas can be attributed to the nature of the coking process and would be found in the majority of the containment areas.

Interim Measures: In March 1992, water from the basin was analyzed, and determined to be not hazardous for Toxicity Characteristics (TC); in fact, no hazardous constituents were detected. The water was then transferred to Tank No. 3 after July 1992. Coal fines were cleaned out and used as fuel at a cement kiln. Tar residue found in the south basin was analyzed and disposed at the Envirosafe landfill in Oregon, Ohio. All steel structures were sold as scrap. The unit was cleaned and capped with approximately 500 cubic yards of clay.

No interim measures have been conducted at the Coal Tar Recycling Area.

Rationale for SWMU Determination: Both units meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264, Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). Solid waste (Coal Tar) was found in the basin.

Need for Inclusion in RFI Release Assessment: Because the release potential to soil/ground water is moderate and solid waste was managed in this unit, inclusion in the RFI Release Assessment is appropriate.

SWMU NO. 3

Unit Name: Primary and Secondary Cooling Towers, and Ammonia Wash Tower

Unit Description: This unit was used for cooling gases that evolved from the coking process. In the process, coal is charged into individual ovens by an exhauster and passes through the Primary and Secondary Cooling Towers. As the gas passes through the towers, it is cooled by direct contact with a spray consisting of a hot, dilute ammonia liquor. The liquor, tar and any releases from this unit are then reclaimed and pumped to the decanters to be recycled and reused. The gas then passes through the ammonia wash towers where water is sprayed on the gas to remove ammonia. This water is then transferred to Tank No. 3. The unit is contained by a concrete pad with a 12 inch curb.

Potential for Release: Releases from some of the flanges may have taken place and staining was observed in July 1992 by EPA on the tanks and containment system.

Interim Measures: This unit was decommissioned after ~~July 1992.~~ Sept. 1991

Rationale for SWMU Determination: The Primary and Secondary Cooling Towers do not meet the definition of a SWMU pursuant to EPA's proposed rule 40 CFR Part 264 Corrective Action for SWMUs at Hazardous Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S), and solid waste has not been managed in this unit at any time. Pursuant to 57 FR 27880, coke by-product residues that are recycled by being returned to coke ovens as a feedstock to produce coke; or returned to the tar recovery process as a feedstock to produce coal tar; or mixed with coal tar prior to coal tar refining or sale; and are hazardous because they exhibit the TC of 40 CFR 261.24, are excluded from the definition of solid waste. Therefore, it is not appropriate to include these cooling towers in SWMU No. 3. However, the Ammonia Wash Tower does meet the definition of a SWMU. Solid waste (wash water from the ammonia wash tower) was managed in this unit.

Need for Inclusion in RFI Release Assessment: Because solid waste was not managed in the Primary and Secondary Cooling Towers, it is not appropriate to include them in the RFI Release Assessment. Solid waste was, however, managed in the Ammonia Wash Tower and the potential for a release is moderate, therefore, it is appropriate to include only the Ammonia Wash Tower in the RFI Release Assessment.

SWMU NO. 4

Unit Name: Flushing Liquor Tanks

Unit Description: Two 6,000-gallon ASTs were used in the coking process to store weak ammonia liquor, which was used for the cooling of coke oven gas. Secondary containment consisted of a concrete floor with a 12-inch curb.

Potential for Release: There is no historical information indicating a release. Staining on the concrete containment and the concrete supports for the tanks and broken curbing was noted by EPA in July 1992.

Interim Measures: In September and October 1992, the ASTs were cleaned, cut up, and sold as scrap. Any remaining ammonia liquor in the tanks was transferred to Tank No. 3, and the tar residues were transferred to No. 1 Tank for recycling. Currently, approximately 5 inches of storm water is present in the containment structure.

Rationale for SWMU Determination: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 CFR Part 264, Corrective Action for SWMUs at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S), and solid waste has not been managed in this unit at any time.

There are no indications of a "routine and systematic" release from this unit.

No evidence of a release was observed outside the containment area.

Need for Inclusion in RFI Release Assessment: Because solid waste was not managed in this unit and any release from this unit was as a result of "passive" leakage or from a one-time spill event, the likelihood of a release to the exterior of the unit is minimal. Interim measures, including removal of the tanks, cleaning of the containment area, and disposal or reclamation of the remaining ammonia liquor and tar residue, have been completed and it is not appropriate to include this area in the RFI Release Assessment.

SWMU NO. 5

Unit Name: No. 1 and No. 2 Liquor Storage Tanks

Unit Description: This unit consist of two 180,000-gallon steel welded tanks used to store ammonia liquor prior to deep well injection. Secondary containment was provided by a concrete pad with concrete walls approximately 5 feet high.

Potential for Release: There is no historical information indicating a release. EPA reports that the concrete containment structure was corroded in several areas, and staining and a sheen on ponded water were observed in July 1992 within this containment unit. In addition, EPA noted that the secondary containment did not appear to contain as much storm water as similar units at the facility, indicating the potential for infiltration through the containment. However, lower levels of storm water existed in this secondary containment structure because these tanks were in operation (unlike the majority of the tanks at the time of the EPA inspection) and storm water was being routinely removed from the containment area and transferred back into the tanks or into Tank No. 3.

Interim Measures: When the facility closed in September 1991, the remaining ammonia liquor was transferred to Tank No. 3. The tanks were then used to store storm water from the facility, and after testing the storm water in March 1992 and receiving a permit modification for the deep well permits in September 1992, the water was transferred to Tank No. 3. Analysis of the storm water indicated that the levels were nonhazardous for TC. In October 1992, the tar that remained in the tanks was removed and shipped to a tar plant for recycling. The tanks were then cleaned, cut up and sold as scrap. The concrete containment wall was demolished to grade level. Currently approximately 5 inches of storm water is present in the containment structure.

Rationale for SWMU Determination: This unit does meet the definition of a SWMU pursuant to EPA's proposed rule 40 CFR Part 264, Corrective Action for SWMUs at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). Solid waste (ammonia liquor) was managed in this unit.

Need for Inclusion in RFI Release Assessment: Because solid waste was managed in this unit and the potential for soil/ground water is moderate, it is appropriate to include this area in the RFI Release Assessment.

SWMU NO. 6

Unit Name: No. 3 Liquor Storage Tank

Unit Description: This unit consists of one 180,000-gallon welded tank used for the storage of weak ammonia liquor prior to disposal by underground injection. The unit has secondary containment with containment walls approximately 4 to 5 feet high.

Potential for Release: There is no historical information indicating a release. EPA reports that the concrete containment structure was corroded in several areas, and staining and an oily sheen on ponded water were observed in July 1992 within this containment unit. In addition, the secondary containment did not appear to contain as much storm water as similar units at the facility, indicating the potential for infiltration through the containment. However, lower levels of storm water in the secondary containment was observed because these tanks were in operation (unlike the majority of the tanks at the time of the EPA inspection) and storm water was being routinely removed from the containment area and transferred back into the tanks or into Tank No. 3.

Interim Measures: When the facility closed in September 1991, the remaining ammonia liquor was transferred to Tank No. 3. The tank is presently used to store storm water from the facility prior to deep well injection.

Rationale for SWMU Determination: This unit does meet the definition of a SWMU pursuant to EPA's proposed rule 40 CFR Part 264, Corrective Action for SWMUs at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). Solid waste (ammonia liquor) was managed in this unit, and the potential for a release is possible.

Need for Inclusion in RFI Release Assessment: Because solid waste was managed in this unit and the release potential to soil/ground water is moderate, inclusion in the RFI Release Assessment is appropriate.

SWMU NO. 7

Unit Name: No. 1 Disposal Well

Unit Description: This unit is an underground injection well, which was used for the disposal of weak ammonia liquor.

Potential for Release: Low

Interim Measures: When the plant closed in September of 1991, all the remaining weak ammonia liquor in storage was transferred to Tank No. 3. However, after obtaining a permit modification in September 1992, storm water from the facility is presently transferred to Tank No. 3.

Rationale for SWMU Determination: This unit does meet the definition of a SWMU pursuant to EPA's proposed rule 40 CFR Part 264, Corrective Action for SWMUs at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). Solid wastes (weak ammonia liquor and storm water) were disposed at this unit.

Need for Inclusion in RFI Release Assessment: The release potential to soil/ground water is low due to the requirements of the underground injection permit (UIP). Therefore, there is no need for inclusion in the RFI Release Assessment.

SWMU NO. 8

Unit Name: No. 2 Disposal Well

Unit Description: This unit is an underground injection well, which was used for the disposal of weak ammonia liquor.

Potential for Release: Low

Interim Measures: When the plant closed in September of 1991, all the remaining weak ammonia liquor was transferred to Tank No. 3. However, after obtaining a permit modification in September 1992, storm water from the facility is presently transferred to Tank No. 3.

Rationale for SWMU Determination: This unit does meet the definition of a SWMU pursuant to EPA's proposed rule 40 CFR Part 264, Corrective Action for SWMUs at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). Solid wastes (weak ammonia liquor and storm water) were disposed at this unit.

Need for Inclusion in RFI Release Assessment: The release potential to soil/ground water is low due to the requirements of the underground injection permit (UIP). Therefore, there is no need for inclusion in the RFI Release Assessment.

SWMU NO. 9

Unit Name: No. 3 Disposal Well

Unit Description: This unit is an underground injection well, which was used for the disposal of weak ammonia liquor.

Potential for Release: Low

Interim Measures: When the plant closed in September of 1991, all the remaining weak ammonia liquor was transferred to Tank No. 3. However, after obtaining a permit modification in September 1992, storm water from the facility is presently transferred to Tank No. 3.

Rationale for SWMU Determination: This unit does meet the definition of a SWMU identified in EPA's proposed rule 40 CFR Part 264, Corrective Action for SWMUs at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). Solid waste (weak ammonia liquor and storm water) was disposed at this unit.

Need for Inclusion in RFI Release Assessment: The release potential to soil/ground water is low due to the requirements of the underground injection permit (UIP). Therefore, there is no need for inclusion in the RFI Release Assessment.

SWMU NO. 10

Unit Name: Tar Decanter Area

Unit Description: This unit consisted of a concrete platform approximately 4 feet high that held 3 rectangular vessels with a capacity of approximately 20,000-gallons per vessel. The liquids that are condensed in the collector main ~~ons~~ are ~~generally~~ routed to the Tar Decanter Area for separation. In this unit, the liquids separate into a lower layer of tar and an upper layer of ammonia liquor. The ammonia liquor overflows to a collector tank and is reused. The coal tar is transferred to the Coal Tar Storage Tank Nos. 10, ~~12~~, and ~~13~~ and sold to the tar plant for further refining. Tar, coal, and coke fines gradually accumulate in the bottom of the decanter, and form K087 sludge, which is removed and mixed with coal and recycled back into the coke ovens. The concrete pad in front of the unit drained to a sump, which directed ~~liquid~~ to the ~~liquor storage tanks~~.

material decanters.

Potential for Release: There is no historical information indicating a release. Staining was noted on the concrete base near the decanters in July 1992 by EPA. The concrete pad did not have a containment curb, however the concrete pad was sloped towards a collection sump. Staining was attributed to the nature of the coking process and would be found in the majority of the containment areas.

Interim Measures: When the plant closed in September 1991, any remaining ammonia liquor was transferred to Tank No. 3, and the coal tar was sold to the tar plant. The K087 was removed by Erie Environmental, Inc. and disposed by incineration in Fairfield, Alabama. The vessels were later cut and sold as scrap in September 1992.

Rationale for SWMU Determination: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264, Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S).

The weak ammonia liquor, coal tar, and K087 managed within the structure were not discarded materials. Pursuant to 57 FR 27880, coke by-product residues that are recycled by being returned to coke ovens as a feedstock to produce coke; or returned to the tar recovery process as a feedstock to produce coal tar; or mixed with coal tar prior to coal tar refining or sale; and are hazardous because they exhibit the TC of 40 CFR 261.24, are excluded from the definition of solid waste. EPA also excluded the similarly-situated hazardous waste K087 when recycled in this way.

There are no indications of a "routine and systematic" release from this unit. No evidence of a release was observed outside the containment area.

Need for Inclusion in RFI Release Assessment: Because solid waste was not managed in this unit and evidence of a release was not present exterior to the containment pad, and because interim measures, including removal of the tanks, cleaning of the containment area, and disposal or reclamation of the remaining ammonia liquor, coal tar, K087, have been completed, it is not appropriate to include this area in the RFI Release Assessment.

SWMU NO. 11

Unit Name: No. 10, 12, and 13 Tar Storage Tanks

Unit Description: This unit consists of three tanks, which were used to store coal tar prior to sale as product. The tanks are of riveted steel construction and are rusted. The unit is contained by concrete walls ranging from 2-4 feet high. The containment's floor construction could not be determined by EPA. Liquids generated in the containment were routed to the by-products area and transferred to Tank No. 3. A small quantity of tar was present in No. 10 Tank. No. 12 Tank was decommissioned in the early 1970s. A hole was cut in the side of the tank, and the tank was cleaned. No. 13 Tank is presently filled with storm water from the tar plant.

Potential for Release: There is no historical information indicating a release. However, the containment was filled with rain water, approximately 100,000-gallons of coal tar, and coal fines as of July 1992. Staining was noted in July 1992 by EPA on the outside walls of the containment structure.

Interim Measures: Water in the containment has been analyzed, found to be nonhazardous, and transferred to Tank No. 3. The remaining tar sludge is being recycled.

Rationale for SWMU Determination: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264 Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S), and solid waste was not managed in this unit.

The coal tar managed within the structure is recyclable material and not discarded material. Pursuant to 57 FR 27880, coke by-product residues that are recycled by being returned to coke ovens as a feedstock to produce coke; or returned to the tar recovery process as a feedstock to produce coal tar; or mixed with coal tar prior to coal tar refining or sale; and are hazardous because they exhibit the TC of 40 CFR 261.24, are excluded from the definition of solid waste.

There are no indications of a "routine and systematic" release from this unit.

Need for Inclusion in RFI Release Assessment: Because solid waste was not managed in this unit and evidence of a release was not present exterior to the containment, and because interim measures, including cleaning of the containment area and reclamation of coal tar, are underway, it is not appropriate to include this area in the RFI Release Assessment.

SWMU NO. 12

Unit Name: Tar Pumping Trench

Unit Description: This unit consists of a six inch pipe, which travels between the coke plant and the tar plant (AlliedSignal) via a concrete trench. This pipe is used to convey coal tar from No. 10 Tank. The trench is present mainly at the surface, but does, at one point, travel underground for a distance. The trench is covered with steel plates. As of July 1992, the trench was filled with storm water.

Potential for Release: There is no historical information indicating a release. Staining was noted in July 1992 by EPA on the pump house wall, ancillary piping by the pump house, and on the concrete trench walls. An oily sheen and balls of tar were also reportedly observed floating in the water. The balls of tar were later identified by Detroit Coke as oil agglomerated with coal fines, and staining was attributed to the nature of the coking process and would be found in the majority of the containment areas.

Interim Measures: Water in the trench has been analyzed and found to be nonhazardous. This water was pumped to the by-products area and transferred to Tank No. 3 after July 1992. Any tar remaining in the trench will be recycled at a coke producing facility.

Rationale for SWMU Determination: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264 Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S), and solid waste was not managed in this unit.

The coal tar, which is transferred through the pipeline, is recyclable material and not discarded material. Pursuant to 57 FR 27880, coke by-product residues that are recycled by being returned to coke ovens as a feedstock to produce coke; or returned to the tar recovery process as a feedstock to produce coal tar; or mixed with coal tar prior to coal tar refining or sale; and are hazardous because they exhibit the TC of 40 CFR 261.24, are excluded from the definition of solid waste.

There are no indications of a "routine and systematic" release from this unit.

No evidence of a release was present external to the secondary containment for the unit.

Need for Inclusion in RFI Release Assessment: Because solid waste was not managed in this unit, evidence of a release was not present external to the secondary containment, and because interim measures, including cleaning of the containment trench and disposal or reclamation of the remaining storm water and coal tar have been completed, it is not appropriate to include this area in the RFI Release Assessment.

SWMU NO. 13

Unit Name: Containment Area by the Tar Pump House

Unit Description: This unit consists of a 12 by 12 foot concrete basin with a steel grate cover behind the tar pump house at No. 10 Tank. This unit surrounds the tar pump house and is adjacent to the containment area of No. 10 Tank and the Tar Trench. This unit was used in the event of a spill near the pump house from the nearby tanks or trenches.

Potential for Release: There is no historical information indicating a release. Staining was noted in July 1992 by EPA on the concrete basin, and tar was present in one of the corners of the unit. A sheen was also observed on the storm water within the unit. Staining was attributed to the nature of the coking process and would be found in the majority of the containment areas.

Interim Measures: Storm water present in the basin was tested for TC and found to be nonhazardous in March 1992. The storm water will be transferred to Tank No. 3.

Rationale for SWMU Determination: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264, Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S), and solid waste was not managed in this unit.

The coal tar managed within the containment structure is recyclable material and not discarded material. Pursuant to 57 FR 27880, coke by-product residues that are recycled by being returned to coke ovens as a feedstock to produce coke; or returned to the tar recovery process as a feedstock to produce coal tar; or mixed with coal tar prior to coal tar refining or sale; and are hazardous because they exhibit the TC of 40 CFR 261.24, are excluded from the definition of solid waste.

There are no indications of a "routine and systematic" release from this unit.

Analysis of storm water from this unit indicate hazardous constituents were not present in the unit.

Evidence of a release was not present exterior to the containment

Need for Inclusion in RFI Release Assessment: Because solid waste was not managed in this unit, evidence of a release was not present exterior to the containment, and because interim measures, including removal and disposal of storm water, have been completed, it is not appropriate to include this area in the RFI Release Assessment.

SWMU NO. 14

This unit has been combined with SWMU NO. 2.

SWMU NO. 15

Unit Name: Diesel Fuel Tank

Unit Description: This unit consisted of a 2,000-gallon horizontal welded steel No. 2 diesel fuel tank for the mobile equipment. It was set on concrete supports and had concrete containment walls and a concrete base, which was approximately 4 feet below grade with 1 foot above grade.

Potential for Release: There is no historical information indicating a release. A black ring was noted by EPA on the interior of the containment structure. A sheen was also visible on ponded water within the containment area, and the adjacent soil was stained. Staining can be attributed to the nature of the coking process and would be found in the majority of the containment areas.

Interim Measures: When the plant closed in September 1991, this tank was emptied. In December 1992, the tank was removed, demolished, and sold as scrap and the concrete above grade was removed. The concrete base was shoveled clean and capped with 4 feet of clay.

Rationale for SWMU Determination: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 CFR Part 264, Corrective Action for SWMUs at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). Solid waste was not transferred to this unit at any time.

There are no indications of a "routine and systematic" release from this unit.

Need for Inclusion in RFI Release Assessment: Because solid waste was not managed in this unit and interim measures, including removal of the tank, cleaning and capping of the containment area, and disposal or reclamation of the remaining fuel oil, have been completed, it is not appropriate to include this area in the RFI Release Assessment.

SWMU NO. 16

Unit Name: Tank Near Pre-Heat Unit

Unit Description: This unit consisted of a ~~2,000~~ 6,000-gallon ~~horizontal~~ tank, which was surrounded by a 4-foot high concrete containment structure. This unit was used to store No. 6 fuel oil.

Potential for Release: There is no historical information indicating a release. Staining was noted in July 1992 by EPA on the concrete containment walls. Staining can be attributed to the nature of the coking process and would be found in the majority of the containment areas.

Interim Measures: Plans to sell the remaining fuel as virgin product, demolish, and sell the tank as scrap are in progress. The containment structure will also be removed.

Rationale for SWMU Determination: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 CFR Part 264, Corrective Action for SWMUs at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). Solid waste was not transferred to this unit at any time.

There are no indications of a "routine and systematic" release from this unit.

No evidence of a release exterior to the containment structure was present.

Need for Inclusion in RFI Release Assessment: Because solid waste was not managed in this unit, evidence of a release exterior to the containment structure was not present, the mobility of No. 6 fuel oil is low, and interim measures, including plans for removal of the tank and containment structure and disposal or reclamation of the remaining fuel oil, are in progress, it is not appropriate to include this area in the RFI Release Assessment.

SWMU NO. 17

Unit Name: Coke Oven Gas (COG) Condensate Sumps

Unit Description: This unit consists of multiple condensate sumps that are located along the COG lines. These sumps accumulate condensate out of the COG stream. The collected condensate is directed back to the tar decanters. The sump was approximately 3 feet in diameter and 3 feet high.

Potential for Release: There is no historical information indicating a release. EPA reported that staining and tar was observed in July 1992 on portions of the sump walls. Staining can be attributed to the nature of the coking process and would be found in the majority of the containment areas.

Interim Measures: The sumps of this unit were pumped prior to the plant closing in September 1991. The sumps and COG lines are currently being removed. Any remaining material encountered will be recycled.

Rationale for SWMU Determination: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264, Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S).

The condensate and coal tar managed within the sumps are recyclable material and not discarded material. Pursuant to 57 FR 27880, coke by-product residues that are recycled by being returned to coke ovens as a feedstock to produce coke; or returned to the tar recovery process as a feedstock to produce coal tar; or mixed with coal tar prior to coal tar refining or sale; and are hazardous because they exhibit the TC of 40 CFR 261.24, are excluded from the definition of solid waste.

No evidence of a release exterior to this unit was present.

Need for Inclusion in RFI Release Assessment: Because solid waste was not managed in this unit, evidence of a release exterior to the sumps was not present, and interim measures, including removal of the sumps and COG lines and disposal or reclamation of the remaining material left in the sumps, are in progress, it is not appropriate to include this area in the RFI Release Assessment.

SWMU NO. 18

Unit Name: Flare Stack

Unit Description: This unit consists of a stack used to flare excess coke oven gas. The stack is of welded steel construction. Any excess coke oven gas not used by the coke ovens was flared.

Potential for Release: Soil around the unit appeared to be stained and an oily smell was present during the EPA inspection in July 1992.

Interim Measures: The flare stack and piping has been cut up and sold as scrap after the plant closed.

Rationale for SWMU Determination: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264, Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S), and solid waste was not managed in this unit. Uncontained gaseous materials are not included in the statutory definition of solid waste.

Need for Inclusion in RFI Release Assessment: Because solid waste was not managed in this unit, it is not appropriate to include this area in the RFI Release Assessment.

SWMU NO. 19

Unit Name: Round Containment

Unit Description: This unit consisted of a circular concrete containment area that was 30 feet in diameter and approximately 14 feet deep with approximately 4 feet of concrete above grade. This unit was primarily used to collect excess storm water from the by-products area. This water was eventually pumped to the decanters and transferred to Tank No. 3.

Potential for Release: The remaining solid material (consisting of coal tar and other solids) in the containment structure exhibited the TC for benzene, and EPA reported that the concrete walls were stained and a oily sheen was present on the water in July 1992.

Interim Measures: When the plant closed in September 1991, the water in the containment was tested for TC and transferred to Tank No. 3. The remaining solids were found to exhibit the TC for benzene. The solids were removed by K&D Services and disposed at the Envirosafe Type I landfill in Oregon, Ohio. The containment area was then scraped; the above grade containment walls were removed, and the basin was filled with clay.

Rationale for SWMU Determination: This unit does meet the definition of a SWMU pursuant to EPA's proposed rule 40 CFR Part 264, Corrective Action for SWMUs at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). Solid waste was managed at this unit.

Need for Inclusion in RFI Release Assessment: Because solid waste was managed in this unit and the potential for soil/ground water is moderate, it is appropriate to include this area in the RFI Release Assessment.

SWMU NO. 20

Unit Name: Drum Storage Area

Unit Description: This unit consists of a 4 to 6 inch curbed, concrete pad measuring approximately 50 by 50 feet and was 18 inches thick. Three concrete sumps were located in the northwest, southwest, and northeast corners of the concrete pad. These sumps were approximately 5 feet deep and 3 feet in diameter and used to hold storm water accumulations. The primary purpose of this unit was to receive virgin products. At the time of the EPA inspection, however, 4 and 1/2 drums of used oil was present on the pad.

Potential for Release: There is no historical information indicating a release, and no hazardous waste was managed at this unit. EPA noted that the concrete pad, curb, and concrete ramp in front of the unit was stained, and rain water on the pad had an oily sheen in July 1992.

Interim Measures: When the plant closed in September 1991, the virgin oil products that remained were sold. The water in the sumps was pumped to No. 3 Tank and transferred to Tank No. 3. The steel racks were sold as scrap.

After July 1992, the used oil was shipped to Safety-Kleen for reuse, and the concrete pad was demolished and hauled away for use as aggregate. The area was then capped with approximately 12 inches of clay and graded.

Rationale for SWMU Determination: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 CFR Part 264, Corrective Action for SWMUs at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S) and solid waste was not managed at this unit.

Need for Inclusion in RFI Release Assessment: Because solid waste was not managed in this unit and interim measures, including removal and capping of the concrete pad and disposal or reclamation of the remaining storm water left in the sumps, have been completed, it is not appropriate to include this area in the RFI Release Assessment.

SWMU NO. 21

Unit Name: Past Secondary Containment Area

Unit Description: This unit is approximately 75 x 150 feet and has 4 feet high concrete walls approximately 12 inches thick. This unit was attached to SWMU No. 19. This containment was never utilized by Detroit Coke.

Potential for Release: There is no historical information indicating a release. Staining on the concrete and a sheen on the water was reported by EPA.

Interim Measures: The concrete containment area was demolished and removed after July 1992.

Rationale for SWMU Determination: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 CFR Part 264, Corrective Action for SWMUs at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S) because no solid waste was managed in this unit.

No evidence of a release exterior to the containment structure was present.

Need for Inclusion in RFI Release Assessment: Because solid waste was not managed in this unit and evidence of a release exterior to the containment structure was not present, and because interim measures, including removal of the concrete containment area, have been completed, it is not appropriate to include this area in the RFI Release Assessment.

AOC NO. 1

Area Name: Coal Unloading/Storage Area

Area Description: This area is approximately 15 to 20 acres that is bordered by the Detroit River. At one time this area was used to stockpile limestone. Later this area was used for coal unloading and storage prior to blending and crushing. Coal arrived mainly by barge prior to 1980. After 1980, the coal arrived by rail. Five different types of coal were normally received by Detroit Coke. Currently, the area is used for the storage of coke breeze.

Potential for Release: Coal and coke breeze from past operations were present on the ground during EPA's inspection in July 1992.

Interim Measures: Coal and coke breeze is being collected and sold as product.

Need for Inclusion in the RFI Release Assessment as an AOC: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264, Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). In addition, the storage of coal and coke breeze is standard practice among industry. EPA has not required the inclusion of similar areas for other industries for RCRA corrective action. Therefore, inclusion of this area in the RFI Release Assessment is not appropriate.

AOC NO. 2

Area Name: Oil Spray Area of Conveyor Belt

Area Description: This unit is located next to the Bulk Density Oil Tank (SWMU No. 1), and consisted of a concrete containment area that was approximately 5 x 10 feet by 6 inches thick with a 6 inch curb. This area was used to contain excess oil overspray from the conveyor belt. Oil (diesel fuel) was sprayed directly onto the coal (not the belt), and therefore any overspray was minimal. Any overspray, would be collected in the containment area and pumped back into the Bulk Density Oil Tank for reuse.

Potential for Release: Low.

Interim Measures: No interim measures have been conducted in this area.

Need for Inclusion in the RFI Release Assessment as an AOC: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264, Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). No evidence of a release is present external to the containment structure. Therefore, inclusion of this area in the RFI Release Assessment is not appropriate.

AOC NO. 3

Area Name: Pre-Heat Coal Fines Recovery Basin

Area Description: This area consists of a concrete basin approximately 75 x 200 feet and has a 18 inch concrete base. This area was used to dewater excess coal fines that were generated in the charging procedures. The coal was removed with a clam bucket and reused by charging back into the coke ovens. Water was transferred to Tank No. 3.

Potential for Release: This area had coal fines covering the bottom and contained standing water at the time of EPA's inspection in July 1992.

Interim Measures: The materials were removed, the concrete containment walls were demolished to grade, and the area was filled and graded.

Need for Inclusion in the RFI Release Assessment as an AOC: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264, Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). No evidence of a release is present external to the containment structure and interim measures, including removal of the materials and demolition, filling and grading of the containment area, have been completed. Therefore, inclusion of this area into the RFI Release Assessment is not appropriate.

AOC NO. 4

Area Name: Quench Tower

Area Description: This area is constructed of concrete and brick. After the coking process, the coke was pushed onto a rail car and taken to the quench station. Approximately 10,000-gallons of recycled water was used to cool the coke. After the coke was drained it was taken to the coke wharf.

Potential for Release: Low.

Interim Measures: No interim measures have been conducted in this area. However, plans for the demolition of this unit are in progress.

Need for Inclusion in the RFI Release Assessment as an AOC: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264, Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). No evidence of a release is present external to the containment structure and plans for the demolition are in progress. Therefore, inclusion of this area into the RFI Release Assessment is not appropriate.

AOC NO. 5

Area Name: Quench Water Recycle Sump

Area Description: The water and coke fines that were generated at the Quench Tower flows through a concrete drainage area that went to a concrete quench sump for settling. The coke fines were removed with a clam bucket and transferred onto a concrete pad for dewatering. The coke fines were reused in the coking process. The water was pumped back to the quench tank for reuse. The concrete trench is approximately 4 feet deep and 3 feet wide, and extends from the quench station and to the quench sump.

Potential for Release: A sheen was noted by EPA on the water within the sump. Staining was observed on the concrete of the sumps and the adjacent concrete draining pad. Staining can be attributed to the nature of the coking process and would be found in the majority of the containment areas.

Interim Measures: The quench sump water was tested, found to be nonhazardous, and transferred to Tank No. 3. The materials were removed. The concrete containment walls were demolished to grade, and the area was filled and graded.

Need for Inclusion in the RFI Release Assessment as an AOC: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264, Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). No evidence of a release is present external to the containment structure and interim measures, including the demolition of the concrete containment walls and filling and grading of the containment area, have been completed,. Therefore, inclusion of this area into the RFI Release Assessment is not appropriate.

AOC NO. 6

Area Name: Septic Tank

Area Description: This tank holds approximately 1,000 gallons. The tank was used prior to the ownership of Detroit Coke. The previous owner used the tank to collect shower water from the plant shower trailer. Periodically, this water was removed by an outside contractor.

Interim Measures: No interim measures have been taken in this area.

Potential for Release: Low due to the lack of hazardous constituents.

Need for Inclusion in the RFI Release Assessment as an AOC: This unit does meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264, Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). However, the potential for release is low due to the lack of hazardous constituents. Therefore, inclusion of this area into the RFI Release Assessment is not appropriate.

AOC NO. 7

Area Name: Outfall 001

Area Description: This area consists of an outfall for non-contact cooling water. Approximately 4 to 5 million gallons per day (mgd) was discharged when the plant was operating. The outfall is located in a corner formed by iron sheet piling.

Potential for Release: Low, due to the lack of hazardous constituents present.

Interim Measures: No interim measures have been taken in this area.

Need for Inclusion in the RFI Release Assessment as an AOC: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264, Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). No process waste water was discharged from this outfall. Industrial point source discharges subject to the Clean Water Act (CWA) are exempt from the definition of solid waste. Furthermore, Detroit Coke maintained compliance with discharge permits when in operation. Therefore, inclusion of this area into the RFI Release Assessment is not appropriate.

AOC NO. 8

Area Name: Outfall 002

Area Description: This area consists of an outfall for runoff from the parking lot.

Potential for Release: Low, due to the lack of hazardous constituents present.

Interim Measures: No interim measures have been taken in this area.

Need for Inclusion in the RFI Release Assessment as an AOC: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264, Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). No process waste water was discharged from this outfall. Industrial point source discharges subject to the Clean Water Act (CWA) are exempt from the definition of solid waste. Furthermore, Detroit Coke maintained compliance with discharge permits when in operation. Therefore, inclusion of this area into the RFI Release Assessment is not appropriate.

AOC NO. 9

Area Name: Half of Tanker Car

Area Description: This was a railroad tanker car with a heating coil that had been cut in half. This unit was used to transport coal tar. Tar that remained was removed and taken to the tar plant for refining, and the tank car was cleaned and sold as scrap.

Potential for Release: This tanker has been removed. No historical records of releases are available.

Interim Measures: Tar that remained was removed and taken to the tar plant for refining, and the tank car was cleaned and sold as scrap.

Need for Inclusion in the RFI Release Assessment as an AOC: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264, Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). Evidence of a release external to the tanker is not present. In addition, interim measures, including removal of the tank and reclamation of the remaining coal tar, have been completed. Therefore, inclusion of this area into the RFI Release Assessment is not appropriate.

AOC NO. 10

Area Name: Former Waste Pile Area

Area Description: This area consisted of an open field, of approximately five acres that was used for the storage of coke and coke breeze. Piles consisting of steel, wood pallets, concrete, coke, rubber belting, and railroad ties accumulated over the years.

Potential for Release: Low, due to the lack of hazardous constituents present.

Interim Measures: The railroad ties and wood were tested and properly disposed. The coke was reclaimed and sold as product. Rubber belting, concrete and broken pallets were landfilled at Wayne Disposal, Inc. The steel was cut and sold as scrap.

Need for Inclusion in the RFI Release Assessment as an AOC: This unit does meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264, Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). However, interim measures, including the testing, removal, and disposal of the material, have been completed. Analytical results for the railroad ties indicated that this material was nonhazardous. Therefore, the inclusion of this area into the RFI Release Assessment is not appropriate.

AOC NO. 11

Area Name: Vehicle Maintenance Building

Area Description: This area consists of a building with a concrete floor used to service heavy construction equipment. Motor oil, hydraulic fluid, antifreeze, and gasoline were stored in metal containers or drums on the floor in this area. A parts washing unit was also located in this building. EPA noted that the concrete floor was stained, and a sheen was observed on ponded water in front of the building.

Potential for Release: Low.

Interim Measures: No interim measures have been taken in this area. However, plans to clean the building are in progress.

Need for Inclusion in the RFI Release Assessment as an AOC: This unit does not meet the definition of a SWMU pursuant to EPA's proposed rule 40 Code of Federal Regulations (CFR) Part 264, Corrective Action for Solid Waste Management Units at Hazardous Waste Management Facilities, July 27, 1990 (Subpart S). Materials (virgin products) containing hazardous constituents were stored indoors on a concrete floor. Therefore, inclusion of this area into the RFI Release Assessment is not appropriate.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 5

77 WEST JACKSON BOULEVARD

CHICAGO, IL 60604-3590

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
UNDERGROUND INJECTION CONTROL PERMIT: CLASS I HAZARDOUS
MAJOR PERMIT MODIFICATION

REPLY TO THE ATTENTION OF:

Permit Number: MI-163-1W-0003

EPA ID Number: MID099114704

Pursuant to the Underground Injection Control regulations of the United States Environmental Protection Agency codified at Title 40 of the Code of Federal Regulations (40 CFR), Parts 124, 144, 146, 147, and 148,

Detroit Coke Corporation of Detroit, Michigan

hereinafter, the permittee, is hereby authorized to operate an existing Class I Hazardous injection well (Well #1) located in Michigan, Wayne County, T2S, R11E, Private Claim 67. The injection zone, or zone which will contain the hazardous constituents, for this well is the Black River, Glenwood, Trempealeau, Eau Claire, and Mt. Simon Formations between the depths of 3286 and 4231 feet. Injection is permitted into the interval of the Mt. Simon Sandstone and lower Eau Claire Formation between the depths of 3764 and 4231 feet upon the express condition that the permittee meet the restrictions set forth herein. The designated confining zone for this injection well is the Queenston and Utica Shales and the Trenton Group.

All references to 40 CFR are to all regulations that are in effect on the date that this permit is effective. The following attachments are incorporated into this permit: A, B, C, D, E, F, G and H.

This permit is a major modification of an existing permit which has an expiration date of midnight, October 24, 1995. This modified permit shall become effective on April 24, 1994, and shall supercede the correlative sections of the existing permit upon issuance. This permit shall remain in full force and effect during the life of the permit, unless: 1) the statutory provisions of Section 3004(f), (g) or (m) of the Resource Conservation and Recovery Act ban or otherwise condition the authorization in this permit; 2) the Agency promulgates rules pursuant to these sections which withdraw or otherwise condition the authorization in this permit; or 3) this permit is otherwise revoked, terminated, modified or reissued pursuant to 40 CFR 144.39 or 144.40.

This permit and the authorization to inject shall expire at midnight, October 24, 1995 unless terminated.

Signed and dated March 21, 1994

Edward V. Nuttall

Dale S. Bryson
Director, Water Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
77 WEST JACKSON BOULEVARD
CHICAGO, IL 60604-3590

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
UNDERGROUND INJECTION CONTROL PERMIT: CLASS I HAZARDOUS
MINOR PERMIT MODIFICATION

REPLY TO THE ATTENTION OF:

Permit Number: MI-163-1W-0003

EPA ID Number: MID099114704

Pursuant to the Underground Injection Control regulations of the United States Environmental Protection Agency codified at Title 40 of the Code of Federal Regulations (40 CFR), Parts 124, 144, 146, 147, and 148,

Detroit Coke Corporation of Detroit, Michigan

hereinafter, the permittee, is hereby authorized to operate an existing Class I Hazardous injection well (Well #1) located in Michigan, Wayne County, T2S, R11E, Private Claim 67. The injection zone, or zone which will contain the hazardous constituents, for this well is the Black River, Glenwood, Trempealeau, Eau Claire, and Mt. Simon Formations between the depths of 3286 and 4231 feet. Injection is permitted into the interval of the Mt. Simon Sandstone and lower Eau Claire Formation between the depths of 3764 and 4231 feet upon the express condition that the permittee meet the restrictions set forth herein. The designated confining zone for this injection well is the Queenston and Utica Shales and the Trenton Group.

All references to 40 CFR are to all regulations that are in effect on the date that this permit is effective. The following attachments are incorporated into this permit: A, B, C, D, and E.

This permit is a minor modification of an existing permit which has an expiration date of midnight, October 24, 1995. This modified permit shall become effective on September 2, 1992, and shall supercede the correlative sections of the existing permit upon issuance. This permit shall remain in full force and effect during the life of the permit, unless: 1) the statutory provisions of Section 3004(f), (g) or (m) of the Resource Conservation and Recovery Act ban or otherwise condition the authorization in this permit; 2) the Agency promulgates rules pursuant to these sections which withdraw or otherwise condition the authorization in this permit; or 3) this permit is otherwise revoked, terminated, modified or reissued pursuant to 40 CFR 144.39 or 144.40.

This permit and the authorization to inject shall expire at midnight, October 24, 1995 unless terminated.

Signed and dated September 2, 1992

Edward V. Wilton

for Dale S. Bryson
Director, Water Division

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
230 SOUTH DEARBORN ST.
CHICAGO, ILLINOIS 60604

REPLY TO ATTENTION OF:

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
UNDERGROUND INJECTION CONTROL PERMIT: CLASS I HAZARDOUS

Permit Number: MI-163-1W-0003

EPA ID Number: MID099114704

Pursuant to the Underground Injection Control regulations of the United States Environmental Protection Agency codified at Title 40 of the Code of Federal Regulations (40 CFR), Parts 124, 144, 146, 147, and 148,

Detroit Coke Corporation of Detroit, Michigan

hereinafter, the permittee, is hereby authorized to operate an existing Class I Hazardous injection well (Well #1) located in Michigan, Wayne County, T2S, R11E, Private Claim 67. The injection zone, or zone which will contain the hazardous constituents, for this well is the Black River, Glenwood, Trempealeau, Eau Claire, and Mt. Simon Formations between the depths of 3286 and 4231 feet. Injection is permitted into the interval of the Mt. Simon Sandstone and lower Eau Claire Formation between the depths of 3764 and 4231 feet upon the express condition that the permittee meet the restrictions set forth herein. The designated confining zone for this injection well is the Queenston and Utica Shales and the Trenton Group.

All references to 40 CFR are to all regulations that are in effect on the date that this permit is effective. The following attachments are incorporated into this permit: A, B, C, D, and E.

This permit shall become effective on OCT 24 1990, and shall remain in full force and effect during the life of the permit, unless: 1) the statutory provisions of Section 3004(f), (g) or (m) of the Resource Conservation and Recovery Act ban or otherwise condition the authorization in this permit; 2) the Agency promulgates rules pursuant to these sections which withdraw or otherwise condition the authorization in this permit; or 3) this permit is otherwise revoked, terminated, modified or reissued pursuant to 40 CFR 144.39 or 144.40.

This permit and the authorization to inject shall expire at midnight, October 24, 1995, unless terminated.

Signed this 24th day of October, 1990.

Dale S. Bryson
Director, Water Division

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PART I
GENERAL PERMIT COMPLIANCE

A. EFFECT OF PERMIT

The permittee is allowed to engage in underground injection in accordance with the conditions of this permit. Notwithstanding any other provisions of this permit, the permittee authorized by this permit shall not construct, operate, maintain, convert, plug, abandon, or conduct any other injection activity in a manner that allows the movement of injection, annulus or formation fluids into underground sources of drinking water (USDW). The objective of this permit is to prevent the introduction of contaminants into USDW if the presence of that contaminant may cause a violation of any primary drinking water regulation under 40 CFR Part 141 or may otherwise adversely affect the health of persons. Any underground injection activity not specifically authorized in this permit is prohibited. Compliance with this permit during its term constitutes compliance, for purposes of enforcement, with Part C of the Safe Drinking Water Act (SDWA). Such compliance does not constitute a defense to any action brought under Section 1431 of the SDWA, or any other common or statutory law other than Part C of the SDWA. Issuance of this permit does not convey property rights of any sort or any exclusive privilege; nor does it authorize any injury to persons or property, any invasion of other private rights, or any infringement of State or local law or regulations. Nothing in this permit shall be construed to relieve the permittee of any duties under applicable regulations.

This permit does not relieve owners and operators of hazardous waste injection wells of their obligation to comply with any additional regulations or requirements under the Resource Conservation and Recovery Act (RCRA). This permit does not authorize any above ground generating, handling, storage, treatment or disposal facilities. Such activities must receive authorization under the regulations promulgated pursuant to Part C of RCRA, if required.

B. PERMIT ACTIONS

1. Modification, Revocation, Reissuance and Termination - The Director of the Water Division of Region V of the United States Environmental Protection Agency, hereinafter the Director, may, for cause or upon request from the permittee, modify, revoke and reissue, or terminate this permit in accordance with 40 CFR 144.12, 144.39, and 144.40. Also, the permit is subject to minor modifications for cause as specified in 40 CFR 144.41. The filing of a request for a permit modification, revocation and reissuance, or termination, or the notification of planned changes, or anticipated noncompliance on the part of the permittee does not stay the applicability or enforceability of any permit condition.

2. Transfer of Permits - This permit is not transferable to any person except in accordance with 40 CFR 144.38.

C. SEVERABILITY

The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance is held invalid, the application of such provision to other circumstances and the remainder of this permit shall not be affected thereby.

D. CONFIDENTIALITY

In accordance with 40 CFR Part 2 and Section 144.5, any information submitted to the United States Environmental Protection Agency (USEPA) pursuant to this permit may be claimed as confidential by the submitter. Any such claim must be asserted at the time of submission by stamping the words "confidential business information" on each page containing such information. If no claim is made at the time of submission, USEPA may make the information available to the public without further notice. If a claim is asserted, the validity of the claim will be assessed in accordance with the procedures in 40 CFR Part 2 (Public Information). Claims of confidentiality for the following information will be denied:

1. The name and address of the permittee; and

2. Information which deals with the existence, absence or level of contaminants in drinking water.

E. DUTIES AND REQUIREMENTS

1. Duty to Comply - The permittee shall comply with all applicable Underground Injection Control (UIC) Program regulations and conditions of this permit, except to the extent and for the duration such noncompliance is authorized by an emergency permit issued in accordance with 40 CFR 144.34. Any permit noncompliance constitutes a violation of the SDWA and is grounds for enforcement action, permit termination, revocation and reissuance, modification, or for denial of a permit renewal application. Such noncompliance may also be grounds for enforcement action under RCRA.

2. Penalties for Violations of Permit Conditions - Any person who violates a permit requirement is subject to civil penalties, fines and other enforcement action under the SDWA and may be subject to such actions pursuant to the RCRA. Any person who willfully violates permit conditions may be subject to criminal prosecution.

3. Continuation of Expiring Permits

   (a) Duty to Reapply - If the permittee wishes to continue an activity regulated by this permit after the expiration date of this permit, the permittee must submit a complete application for a new permit at least 180 calendar days before this permit expires.

(b) Permit Extensions - The conditions of an expired permit may continue in force in accordance with 5 U.S.C. 558(c) and 40 CFR 144.37.

(c) Effect - Permits continued under 5 U.S.C. 558(c) and 40 CFR 144.37 remain fully effective and enforceable.

(d) Enforcement - When the permittee is not in compliance with the conditions of the expiring or expired permit, the Director may choose to do any or all of the following:

(1) Initiate enforcement action based upon the permit which has been continued;

(2) Issue a notice of intent to deny the new permit. If the permit application is denied, the owner or operator would then be required to cease the activities authorized by the continued permit or be subject to enforcement action for operation without a permit;

(3) Issue a new permit under 40 CFR Part 124 with appropriate conditions; or

(4) Take other actions authorized by the UIC regulations.

(e) State Continuation - A USEPA-issued permit does not continue in force beyond its expiration date under Federal law if at that time a State has primary enforcement responsibility under the SDWA. A State authorized to administer the UIC program may continue either USEPA- or State-issued permits until the effective date of the new permits, if State law allows. Otherwise, the facility or activity is operating without a permit from the time of expiration of the old permit to the effective date of the State-issued new permit. Furthermore, if the State does not continue the expired USEPA permit upon obtaining primary enforcement responsibility, the permittee must obtain a new State permit or be authorized to inject by State rule and failure to do so will result in unauthorized injection.

4. Need to Halt or Reduce Activity Not a Defense - It shall not be a defense for the permittee in an enforcement action, to claim that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of this permit.

5. Duty to Mitigate - The permittee shall take all timely and reasonable steps necessary to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.

6. Proper Operation and Maintenance - The permittee shall at all times properly operate and maintain all facilities and systems of treatment

and control and related appurtenances which are installed or used by the permittee to achieve compliance with the conditions of this permit. Proper operation and maintenance includes effective performance, adequate funding, adequate operator staffing and training, and adequate laboratory and process controls, including appropriate quality assurance procedures. This provision requires the operation of back-up or auxiliary facilities or similar systems only when necessary to achieve compliance with the conditions of this permit.

7. Duty to Provide Information - The permittee shall furnish to the Director, within a time specified, any information which the Director may request to determine whether cause exists for modifying, revoking and reissuing, or terminating this permit, or to determine compliance with this permit. The permittee shall also furnish to the Director, upon request, copies of records required to be kept by this permit.

8. Inspection and Entry - The permittee shall allow the Director or an authorized representative, upon the presentation of credentials and other documents as may be required by law to:

   (a) Enter, at reasonable times, upon the permittee's premises where a regulated facility or activity is located or conducted, or where records are kept under the conditions of this permit;

   (b) Have access to and copy, at reasonable times, any records that are kept under the conditions of this permit;

   (c) Inspect, at reasonable times, any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this permit; and

   (d) Sample or monitor, at reasonable times, for the purposes of assuring permit compliance or as otherwise authorized by the SDWA, any substances or parameters at any facilities, equipment or operations regulated or required under this permit.

9. Records

   (a) The permittee shall retain records of all monitoring information, including all calibration and maintenance records and all original chart recordings for continuous monitoring instrumentation and copies of all reports required by this permit for a period of at least five (5) years from the date of the sample, measurement or report, unless these materials are submitted to the Director as part of reporting requirements under this permit.

   (b) The permittee shall maintain records of all data required to complete the permit application form for this permit and any supplemental information submitted under 40 CFR 144.27, 144.28,

and 144.31 for a period of at least five (5) years from the date the application was signed.

(c) The permittee shall retain records concerning the nature and composition of all injected fluids until three (3) years after the completion of plugging and abandonment.

(d) The retention period specified in Part I(E)(9)(a) through (c) of this permit may be extended by request of the Director at any time. The permittee shall continue to retain records after the retention period specified in Part I(E)(9)(a) through (c) of this permit or any requested extension thereof expires unless the permittee delivers the records to the Director or obtains written approval from the Director to discard the records.

(e) Records of monitoring information shall include:

(1) The date, exact place, and time of sampling or measurements;

(2) The individual(s) who performed the sampling or measurements;

(3) A precise description of both sampling methodology and the handling of samples;

(4) The date(s) analyses were performed;

(5) The name(s) of individual(s) who performed the analyses;

(6) The analytical techniques or methods used; and

(7) The results of such analyses.

10. Monitoring - Samples and measurements taken for the purpose of monitoring shall be representative of the monitored activity. The permittee shall use the methods described in Appendix I of 40 CFR Part 261, or an equivalent method approved by the Director, to take representative samples. Monitoring results shall be reported at the intervals contained in Part II(D)(1) through (3) and Part III (A) of this permit.

(a) Monitoring of the nature of injected fluids shall comply with applicable analytical methods cited and described in Table I of 40 CFR 136.3 or in Appendix III of Part 261 or in certain circumstances by other methods that have been approved by the Director.

(b) Sampling and analysis shall comply with the specifications of the Waste Analysis Plan required in Part II(C)(3) of this

permit.

11. Signatory Requirements - All reports required by the permit, and other information when so requested by the Director, shall be signed and certified in accordance with 40 CFR 144.32.

12. Reporting Requirements

(a) Planned Changes - The permittee shall give written notice to the Director, as soon as possible, of any planned physical alterations or additions to the permitted facility other than minor repair/replacement maintenance activities.

(b) Anticipated Noncompliance - The permittee shall give advance notice to the Director of any planned changes in the permitted facility or activity which may result in noncompliance with permit requirements.

(c) Compliance Schedules (§144.53) - Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted by the permittee no later than thirty (30) calendar days following each schedule date.

(d) Twenty-four Hour Reporting

(1) The permittee shall report to the Director any permit noncompliance which may endanger health or the environment. See, e.g. Part I(H)(5) of this permit. Any information shall be provided orally within twenty-four (24) hours from the time the permittee becomes aware of the circumstances. Such reports shall include, but not be limited to the following information:

(i) Any monitoring or other information which indicates that any contaminant may cause an endangerment to an USDW; and

(ii) Any noncompliance with a permit condition, or malfunction of the injection system, which may cause fluid migration into or between USDW; and

(iii) Any failure to maintain mechanical integrity.

(2) A written submission shall also be provided within five (5) working days of the time the permittee becomes aware of the circumstances. The written submission shall contain a description of the noncompliance and its cause; the period of noncompliance, including exact dates and times, and, if the noncompliance has not been corrected, the anticipated time it is expected to continue; and steps

taken or planned to reduce, eliminate and prevent recurrence of the noncompliance.

(e) Other Noncompliance - The permittee shall report all other instances of noncompliance not otherwise reported at the time monitoring reports are submitted. The reports shall contain the information listed in Part I(E)(12)(d)(2) of this permit.

(f) Other Information - When the permittee becomes aware of failure to submit any relevant facts in the permit application or that incorrect information was submitted in a permit application or in any report to the Director, the permittee shall submit such facts or corrected information within ten (10) calendar days, unless a longer time period is approved by the Director.

(g) Report on Permit Review - Within thirty (30) calendar days of receipt of this permit, the permittee shall certify to the Director that he or she has read and is personally familiar with all terms and conditions of this permit.

13. Waste Minimization - Within 60 calendar days of the effective date of this permit, the permittee shall certify in writing to the USEPA that:

a) The permittee has a program in place to reduce the volume or quantity and toxicity of the injected hazardous waste, to the degree determined by the permittee to be economically practicable; and

b) Injection of the waste is that practicable method of disposal currently available to the generator which minimizes the present and future threat to human health and the environment.

In addition, at least every twelfth month, the permittee shall report in writing to the USEPA regarding the progress that has been made toward reducing the volume or quantity and toxicity of injected hazardous waste during the previous year.

F. CLOSURE

1. Closure Plan - A plan for closure of the well that includes assurance of financial responsibility as required in §144.52(a)(7), and includes the information, relating to plugging and abandonment, required under §146.71(a)(4), is found in Part III(B) of this permit. The implementation of the Closure Plan is a condition of this permit; however, the permittee must receive the approval of the Director to proceed before implementing this plan. The obligation to implement the Closure Plan survives the termination of this permit or the cessation of injection activities.

2. Revision of Closure Plan - The permittee shall submit any proposed

significant revision to the method of closure reflected in the Closure Plan for approval by the Director no later than sixty (60) calendar days before closure, unless a shorter period of time is approved by the Director.

3. Notice of Intent to Close - The permittee shall notify the Director at least sixty (60) calendar days before closure of the well, unless a shorter notice period is approved by the Director.

4. Temporary Disuse - A permittee who wishes to cease injection for longer than 24 months may keep the well open only if he or she:

   (a) Has received authorization from the Director; and

   (b) Has described actions or procedures, satisfactory to the Director, that he or she will take to ensure that the well will not endanger USDWs during this period. These actions or procedures shall include compliance with the technical requirements applicable to active injection wells unless waived by the Director.

5. Closure Report - The permittee shall submit a closure report to the Director which meets the requirements of §146.71(c), within the time frame specified in §146.71(c).

6. Standards for Well Closure - Prior to closing the well, the permittee shall:

   (a) Observe and record the pressure decay for a time specified by the Director and report this information to the Director;

   (b) Conduct mechanical integrity tests as requested by the Director to ensure integrity of casing and cement left in the ground after closure. Required testing methods may include any or all of those listed in §146.71(d)(2); and

   (c) Flush the well with a buffer fluid.

G. POST-CLOSURE CARE

The permittee shall comply with the requirements for post-closure care and financial responsibility for post-closure care found at 40 CFR 146.72 and 146.73.

1. Post-Closure Plan - The permittee shall submit a plan for post-closure maintenance and monitoring within sixty (60) calendar days of the effective date of this permit, for approval by the Director. This plan shall include the information required by §146.72(a) and shall demonstrate how each of the applicable requirements of §146.72(b) will be met. The approved post-closure plan will be part of the permit file for this permit and the permittee shall maintain

and comply with this plan as if it were fully set forth herein. The obligation to implement the post-closure plan survives the termination of this permit or the cessation of injection activities.

2. Duration of Post-Closure Period - The Post-Closure Care Period shall continue at least until all of the requirements of the approved post-closure plan and of 40 CFR 146.72 have been met. Prior to the time that the post-closure care period is due to expire, the Director may extend the post-closure care period if he or she finds that the extended period is necessary to protect the health of persons or to protect a USDW.

3. Post-Closure Corrective Action - The permittee shall continue and complete any cleanup action required under §146.64.

4. Post-Closure Groundwater Monitoring - The permittee shall continue to conduct any groundwater monitoring if required under this permit until pressure in the injection zone decays to the point that the well's cone of influence no longer intersects the hydrostatic head of the lowermost USDW, as identified in the Administrative Record for this permit. The permittee shall estimate the time for pressure in the injection zone to decay to this point and shall include this estimate in the Post-Closure Plan. The Director may extend the period of post-closure monitoring if he or she determines that it is necessary to protect the health of persons or to protect a USDW.

5. Survey Plat - The permittee shall submit a survey plat to the local zoning authority designated by the Director as required by §146.72(b)(3) and submit a copy to the USEPA Region V Regional Administrator.

6. Notification to State and Local Authority - The permittee shall provide notification and information to State and local authorities as required by §146.72(b)(4).

7. Retention of Records - The permittee shall retain, for a period of three years following well closure, the records specified by §146.72(b)(5), and shall deliver those records to the Director at the end of the retention period.

8. Notice in Deed to Property - The permittee must record, in accordance with State law, a notation on the deed to the facility property, or on some other instrument which is normally examined during title search, that will in perpetuity provide any potential purchaser of the property with the information listed in §146.72(c).

9. Financial Responsibility for Post-Closure Care - The permittee shall submit a demonstration of financial responsibility for post-closure care, as required in §146.73, at the time of the next annual update of the financial assurance mechanism after the effective date of this permit, for approval by the Director. The obligation to maintain

financial responsibility for post-closure care survives the termination of this permit or the cessation of injection.

H. MECHANICAL INTEGRITY

1. Standards - The injection well must have and maintain mechanical integrity consistent with 40 CFR 146.8(a)(1) and (2). Mechanical integrity demonstrations must be witnessed by an authorized representative of the Director to meet the requirement of 40 CFR 146.8.

2. Periodic Mechanical Integrity Testing - The permittee shall conduct the mechanical integrity testing as follows:

   (a) Long string casing, injection tubing and annular seal shall be tested by means of an approved pressure test in accordance with 40 CFR 146.8(b)(2) at least once every twelfth month beginning with the date of the last approved demonstration and whenever there has been a well workover in which tubing is removed from the well, the packer is reset, or when loss of mechanical integrity becomes suspected during operation;

   (b) The bottom-hole cement shall be tested by means of an approved radioactive tracer survey at least once every twelfth month beginning with the date of the last approved demonstration;

   (c) An approved temperature, noise, or other approved log, shall be run at least once every sixty (60) months. The Director may require such tests whenever the well is worked over. The permittee must submit logging procedures to the Director for approval before running logs for the purpose of meeting this requirement;

   (d) An approved casing inspection log shall be run at least once every sixty (60) months;

   (e) The permittee may use any other test approved by the Director in accordance with the procedures in §146.8(d).

3. Prior Notice and Reporting - The permittee shall notify the Director of his or her intent to demonstrate mechanical integrity at least thirty (30) calendar days prior to such demonstration. At the discretion of the Director a shorter time period may be allowed. Reports of mechanical integrity demonstrations which include logs must include an interpretation of results by a knowledgeable log analyst. The permittee shall report the results of a mechanical integrity demonstration within forty-five (45) calendar days after completion thereof.

4. Gauges - The permittee shall calibrate all gauges used in mechanical integrity demonstrations to an accuracy of not less than one-half (0.5) percent of full scale, prior to each required test of mechanical integrity. A copy of the calibration certificate shall be

submitted to the Director or his or her representative at the time of demonstration and every time the gauge is calibrated. The gauge shall be marked in no greater than five (5) psi increments.

5. Loss of Mechanical Integrity - If the permittee or the Director finds that the well fails to demonstrate mechanical integrity during a test, or fails to maintain mechanical integrity during operation, or that a loss of mechanical integrity as defined by 40 CFR 146.8(a)(1) and (2) is suspected during operation, the permittee shall halt the operation immediately and follow the reporting requirements as directed in Part I(E)(12) of this permit. The permittee shall not resume operation until mechanical integrity is demonstrated and the Director gives approval to recommence injection.

6. Mechanical Integrity Testing on Request From Director - The permittee shall demonstrate mechanical integrity at any time upon written notice from the Director.

I. FINANCIAL RESPONSIBILITY

1. Financial Responsibility - The permittee shall maintain financial responsibility and resources to comply with closure and post-closure requirements of this permit, in a manner consistent with 40 CFR 144.52 (a)(7), 144.60 through 144.70, and 146.73. The approved financial assurance mechanism for closure costs is found in Part III(B) of this permit. The permittee shall update this mechanism to include post-closure costs at the time of the next annual update after the effective date of this permit.

   (a) Pursuant to 40 CFR 144.62(a) and 146.73, the permittee must maintain a written cost estimate, in current dollars, for the Closure Plan and Post-Closure Plan as specified in 40 CFR 146.10 and 146.72. The closure and post-closure cost estimate at any point in the life of the facility operation must equal the maximum cost of closure and post-closure at that time.

   (b) Pursuant to 40 CFR 144.62(b) and 146.73, the permittee must adjust the cost estimate of closure and post-closure for inflation within thirty (30) calendar days after each anniversary of the first estimate. The inflation factor is prescribed in §144.62(b).

   (c) The permittee must revise the closure and post-closure cost estimate whenever a change in the Closure Plan or Post-Closure Plan increases the cost of closure.

   (d) If the revised closure and post-closure cost estimate exceeds the current amount of the financial assurance mechanism, the permittee shall submit a revised mechanism to cover the increased cost within ninety (90) calendar days after the revision specified in Part I(I)(1)(b) and (c) of this permit.

(e) The permittee must keep on file at the facility a copy of the latest closure and post-closure cost estimate prepared in accordance with 40 CFR 144.62, during the operating life of the facility.

2. Insolvency - The permittee must notify the Director within ten (10) business days of any of the following events:

(a) The bankruptcy of the trustee or issuing institution of the financial mechanism; or

(b) Suspension or revocation of the authority of the trustee institution to act as trustee; or

(c) The institution issuing the financial mechanism losing its authority to issue such an instrument.

3. Notification - The permittee must notify the Director by certified mail of the commencement of voluntary or involuntary proceedings under Title 11 (Bankruptcy), U.S. Code, naming the permittee as debtor, within ten (10) business days after the commencement of the proceeding. A guarantor of a corporate guarantee must make such a notification if he or she is named as debtor, as required under the terms of the guarantee.

4. Establishing Other Coverage - The permittee must establish other financial assurance or liability coverage acceptable to the Director, within sixty (60) calendar days of the occurrence of the events in Part I(I)(2) or (I)(3) of this permit.

J. CORRECTIVE ACTION

1. Compliance - The permittee shall comply with 40 CFR 144.55 and 146.7.

2. Corrective Action under 40 CFR 146.64 - A plan for corrective action under 40 CFR 146.64 is not necessary at this time because no improperly plugged, completed, or abandoned wells are known to be present in the Area of Review (AOR). The permittee shall file a Corrective Action Plan for approval by the Director within sixty (60) days of a written determination by the Director that improperly plugged, completed, or abandoned wells are present in the AOR. The AOR is specified in the administrative record for this permit.

3. Prohibition of Movement of Fluids into USDWs (§144.12) - Should upward migration of fluids through the confining zone of this permitted well be discovered within the area of review for this well, which is recorded in the administrative record, and should this migration of fluids cause the introduction of any contaminant into a USDW pursuant to 40 CFR 144.12, the permittee shall immediately cease injection into this well until the situation has been corrected and reauthorization has been given by the Director.

4. Corrective action under §3004(u) of the Resource Conservation and Recovery Act - The permittee shall institute corrective action as necessary to protect human health and the environment for all releases of hazardous waste or hazardous constituents from any solid waste management unit, regardless of the time at which waste was placed in the unit. The schedules for compliance for completing such corrective action are contained in Attachments E through H.

K. INJECTION OF RESTRICTED HAZARDOUS WASTES

1. Compliance - The permittee shall comply with all regulations set forth under 40 CFR Part 148. The permittee may continue to inject the restricted hazardous wastes specified in Part III(D) of this permit as long as all other requirements of this permit and applicable regulations are met and at least one of the following remains in effect:

   (a) an extension from the effective date of a prohibition has been granted pursuant to 40 CFR 148.4 with respect to such waste;

   (b) an exemption granted in response to a petition filed under §148.20 to allow injection of restricted wastes, with respect to those wastes and wells covered by the exemption, remains in effect, and all conditions of the exemption are met; or

   (c) treatment standards for land disposal restrictions have not been promulgated for the hazardous constituents of the wastestream.

2. Injection Limitations - Characteristics and concentrations of hazardous constituents of injected waste shall not exceed any limits listed in Part III(D) of this permit. The monthly average injection rate for the permitted well shall not exceed the limitation listed in Part III(A) of this permit.

3. Petition Modification and Update - The permittee may inject restricted wastes other than those listed in Part III(D) of this permit or wastes in concentrations in excess of those listed in Part III(D) of this permit only after he or she has (1) submitted a modified petition to the Director and received a final Agency approval of the modification(s), and (2) this permit has been modified accordingly.

   The permittee shall notify the Director within 48 hours upon obtaining knowledge that information submitted in support of a petition in accordance with 40 CFR 148.20 is false, inaccurate, or incomplete.

4. Petition Termination - Upon written notification from the Director that an exemption granted under Section 148.20 has been terminated, the permittee shall immediately cease injection of all prohibited hazardous wastes.

5. Petition Review [§148.23] - When considering whether to reissue this permit upon expiration, the Director may require a new or updated petition demonstration if information shows that the basis for granting the exemption may no longer be valid.

PART II
WELL SPECIFIC CONDITIONS FOR UIC PERMITS

A. CONSTRUCTION [§146.12 and 144.51]

1. Siting - The injection well shall inject only into the formation and depths listed on the cover page of this permit. At no time shall injection occur into a formation which is or is above the lowermost formation containing, within one quarter mile of the well bore, an underground source of drinking water.

2. Casing and Cementing - Notwithstanding any other provisions of this permit, the permittee shall case and cement the well in such a manner so as to prevent the movement of fluids into or between USDWs for the expected life of the well. The casing and cement used in the construction of this well are shown in Part III(C) of this permit.

3. Tubing and Packer Specifications - The permittee shall inject only through tubing with a packer set within the long string casing at a depth below 3500 feet below the surface. The tubing and packer used in the well are represented in engineering drawings contained in Part III(C) of this permit.

4. Wellhead Specification - The permittee shall maintain a female coupling and valve on the wellhead, to be used for independent injection pressure readings.

B. OPERATIONS [§146.67]

1. Injection Pressure Limitation - Except during stimulation, the permittee shall not cause or permit the injection pressure at the wellhead to exceed the maximum limitation which is specified in Part III(A) of this permit. In no case, shall injection pressure initiate fractures or propagate existing fractures in the confining zone or cause the movement of injection or formation fluids into a USDW.

2. Additional Injection Limitation - No substances other than those identified in Part III(D) of this permit shall be injected. The permittee shall submit a certified statement attesting to compliance with this requirement at the time of the annual report.

3. Annulus Fluid and Pressure - The permittee shall fill the annulus between the tubing and the long string casing with a fluid approved by the Director and identified in the administrative record of this permit. Any change in the annulus fluid shall be submitted by the permittee for the approval of the Director before replacement. The permittee shall maintain a positive pressure on the annulus as specified in Part III(A) of this permit, except during workovers or times of annulus maintenance.

4. Annulus/Tubing Pressure Differential - Except during workovers, the permittee shall maintain, over the entire length of the tubing, a pressure differential between the tubing and annulus as specified in

Part III(A) of this permit.

5. Warning and Shut-off System - The permittee shall continuously operate and maintain an automatic warning and automatic shut-off system to stop injection within thirty (30) minutes of any of the following situations:

   (a) Pressure changes in the annulus or annulus/tubing differential signifying or identifying possible deficiencies in mechanical integrity; or

   (b) Injection pressure, annulus pressure, or annulus/tubing differential pressure reaches the pressure limits as specified in Part III(A) of this permit.

   The permittee must test the warning system and shut-off system at least once every twelfth month after the effective date of this permit. These tests must involve subjecting the system to simulated failure conditions and must be witnessed by the Director or his or her representative.

6. Precautions to Prevent Well Blowouts

   (a) The permittee shall maintain on the well at all times a pressure which will prevent the return of the injection fluid to the surface. If there is gas formation in the injection zone near the well bore, such gas must be prevented from entering the casing or tubing. The well bore must be filled with a high specific gravity fluid during workovers to maintain a positive (downward) gradient and/or a plug shall be installed which can resist the pressure differential. A blowout preventer must be kept in proper operational status during workovers which involve tubing or packer removal.

   (b) In cases where the injected wastes have the potential to react with the injection formation to generate gases, the permittee shall follow the procedures below to assure that a backflow or blowout does not occur:

      (1) Limit the temperature, pH or acidity of the injected waste; and

      (2) Develop procedures necessary to assure that pressure imbalances do not occur.

C. MONITORING [§146.68]

1. Sampling Point - The injection fluid samples shall be taken at the sampling location as specified in Part III(D) of this permit.

2. Continuous Monitoring Devices - The permittee shall install continuous monitoring devices and use them to monitor injection pressure, injection volume, flow rate and the pressure on the annulus

between the tubing and the long string of casing. The monitoring results shall be submitted to the Director as specified in Part II(D) of this permit.

3. Waste Analysis Plan - The permittee shall comply with the Waste Analysis Plan which is a part of the administrative record for this permit. A copy of the approved plan shall be kept at the facility. The permittee shall assure that the plan remains accurate and the analyses remain representative by so certifying at the time of the annual report.

4. Ambient Monitoring - At least every twelfth month, the permittee shall, pursuant to 40 CFR 146.68(e), monitor the pressure buildup in the injection interval, including, at a minimum, a shut down of the well for a time sufficient to conduct a valid observation of the pressure fall-off curve.

D. REPORTING REQUIREMENTS [§146.69]

The permittee shall submit all required reports to the Director at the following address, no later than the end of the month following the reporting period:

United States Environmental Protection Agency
77 W. Jackson, WD-17J
Chicago, Illinois 60604
ATTN: UIC Section, Enforcement Unit

1. Monthly Reports. The permittee shall submit monthly reports of the following information for those months when injection occurs. If injection does not occur during the month, the permittee shall submit monthly notification stating that injection did not occur:

   (a) Results of the injection fluid analyses specified in the approved Waste Analysis Plan, as recorded in the administrative record for this permit. In reporting fluid analyses, the permittee shall identify the waste components of the waste stream by their common name, chemical name, structure and concentration, or as approved by the Director;

   (b) Daily average and monthly average values for injection pressure, flow rate and volume, and annulus pressure, and daily values and monthly average values for sight glass level. Daily measurements of injection pressure, rate and volume need not occur if no injection occurs;

   (c) Daily maximum and minimum values for injection pressure, injection volume, flow rate, and annulus pressure;

   (d) A graph or chart representation of the continuous monitoring as required in Part II(C)(2) of this permit, or of daily average values of these parameters. The injection pressure, injection volume, flow rate, and annulus pressure shall be submitted on a

single graph, using contrasting symbols or colors, or in another manner approved by the Director;

(e) Total volume of fluid injected;

(f) Monthly volumes of annulus liquid loss and/or gain, including additions by the permittee. A value correlating changes in sight glass level with changes in annulus volume must be determined and reported to the Director; and

(g) Any noncompliance with conditions of this permit, including but not limited to:

(1) Any event that exceeds operating parameters for annulus pressure or injection pressure or annulus/tubing differential as specified in the permit; or

(2) Any event which triggers an alarm or shutdown device required in Part II(B)(5) of this permit.

2. Annual Reports - The permittee shall report the following at least every twelfth month from the effective date of this permit:

(a) Results of the injection fluid analyses specified in the approved Waste Analysis Plan as recorded in the administrative record for this permit. This report must include statements showing that the requirements of Part I(E)(10) and Part II(B)(2) have been met.

(b) Results of pressure fall-off testing required by 40 CFR 146.68(e).

(c) Progress made during the previous year toward waste minimization.

3. Reports on Well Tests and Workovers - Within forty-five (45) calendar days after the activity, the permittee shall report to the Director the results of demonstrations of mechanical integrity, any well workover, or results of other tests required by this permit. If reports cited in this paragraph are not made within this time period, the Director may consider the tests to have been failed.

PART III
ATTACHMENTS

These attachments include, but are not limited to, permit conditions and plans concerning operating procedures, monitoring and reporting, as required by 40 CFR Parts 144, 146 and 148. The permittee shall comply with these conditions and adhere to these plans as approved by the Director, as follows:

A. SUMMARY OF OPERATING, MONITORING AND REPORTING REQUIREMENTS (ATTACHED)

B. CLOSURE PLAN (ATTACHED)

C. CONSTRUCTION DETAILS (ATTACHED)

D. SOURCE AND ANALYSIS OF WASTE (ATTACHED)

E. CONTINUING RELEASES/CORRECTIVE ACTION (ATTACHED)

F. CORRECTIVE ACTION SCOPE OF WORK (ATTACHED)

G. CORRECTIVE MEASURES STUDY SCOPE OF WORK (ATTACHED)

H. CORRECTIVE ACTION SCHEDULE OF COMPLIANCE (ATTACHED)

ATTACHMENT A

ATTACHMENT A

SUMMARY OF OPERATING, MONITORING AND REPORTING REQUIREMENTS

CHARACTERISTIC	LIMITATION	MINIMUM MONITORING FREQUENCY	MINIMUM REPORTING FREQUENCY
Injection Pressure	953 psig	continuous	monthly
Annulus Pressure	100 psig minimum	continuous	monthly
Annulus/Tubing Differential	50 psig above the injection pressure	continuous	monthly
Injection Rate	165 gpm maximum*	continuous	monthly
Sight Glass Level		daily	monthly
Cumulative Volume		continuous	monthly
Annulus Fluid Loss		daily	monthly
Chemical and Physical Composition of Injected Fluids**	pH < 12.5	monthly	monthly
pH, Specific Gravity		daily***	monthly
Total Suspended Solids		monthly****	monthly
Benzene, Cyanide, Napthalene, Phenol		monthly****	monthly

* The injection rate limit is the combined rate for all three injection wells operated by Detroit Coke Corporation, taken as a monthly average.

** As specified in the approved Waste Analysis Plan, found in the administrative record for this permit.

*** Monitoring required if injection occurred that day.

**** Monitoring required if injection occurred that month.

ATTACHMENT B

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

EPA

PLUGGING AND ABANDONMENT PLAN

MI-163-1W-0003
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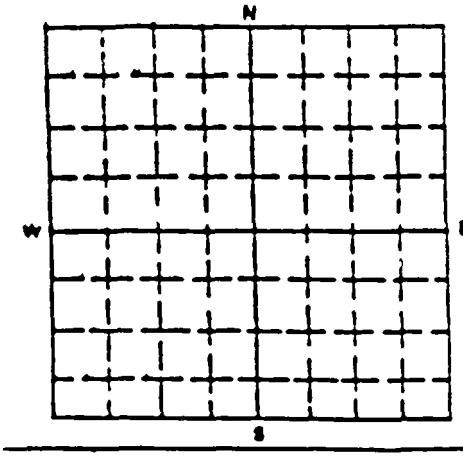
WELL NAME & NUMBER, FIELD NAME, LEASE NAME & NUMBER

Well #1 US EPA PN MI-163-1W-0003
MDNR PN 69-737-882

NAME, ADDRESS, & PHONE NUMBER OF OWNER/OPERATOR

Detroit Coke Corporation
7819 W. Jefferson
Detroit, MI 48209 (313) 842-6222

Locate Well And Outline Unit On Section Plat — 640 Acres



STATE	COUNTY	STATE PERMIT NUMBER
MI	Wayne	69-737-882

SURFACE LOCATION DESCRIPTION

42 17' 30"N 83 6'20"W Private Claim 67 Twsp 2S Range 11E

LOCATE WELL IN TWO DIRECTIONS FROM NEAREST LINES OF QUARTER SECTION AND DRILLING UNIT

Surface Location _____ ft. From (N/S) _____ Line Of Quarter Section

And _____ ft. From (E/W) _____ Line Of Quarter Section

TYPE OF AUTHORIZATION

- [X] Individual Permit
- [ ] Rule
- [ ] Area Permit

Number of Wells In Area Permit _____

U.S.EPA Permit Number MI-163-1W-0003

WELL ACTIVITY

- [X] Class I
  - Hazardous
  - Nonhazardous
- [ ] Class II
  - [ ] Brine Disposal
  - [ ] Enhanced Recovery
  - [ ] Hydrocarbon Storage
- [ ] Class III
- [ ] Class V

CASING/TUBING/CEMENT RECORD AFTER PLUGGING AND ABANDONMENT

Size	Wt (lb/ft) TBG/CSG	Original Amount (CSG) (ft)	CSG to be Left in Well (ft)	Hole Size (in)	Sacks Cement Used	Type
13 3/8	48 CSG	121	121	17½	150	A
8 5/8	24 CSG	1764	1764	11	545	A
5½	14 CSG	2118	2118	7 7/8	400	
2 7/8	6.5 TBG	NA	NA	NA	NA	NA

METHOD OF EMPLACEMENT OF CEMENT PLUGS

- [X] The Balance Method
- [ ] The Dump Bailer Method
- [ ] The Two Plug Method
- [ ] Other, Explain:

CEMENT TO PLUG AND ABANDON DATA:

	Plug # 1	Plug # 2	Plug # 3	Plug #	Plug #	Plug #	Plug #
Size of Hole or Pipe in Which Plug Will Be Placed (inches)	7 7/8	5 1/2	8 5/8				
Calculated Top of Plug (ft)	3764	1764	3				
Measured Top of Plug (ft)	NA	NA	NA				
Depth to Bottom of Plug (ft)	4088	3764	1764				
Sacks of Cement to be Used	117 *	246	499				
Slurry Volume to be Used (cu ft)	138	290	589				
Slurry Weight (lb /gal)	15.6	15.6	15.6				
Type of Cement, Spacer or Other Material Used	H	H	H				
Type of Preflush Used	Brine	Brine	Brine				

DESCRIPTION OF PLUGGING PROCEDURE

See Attachment

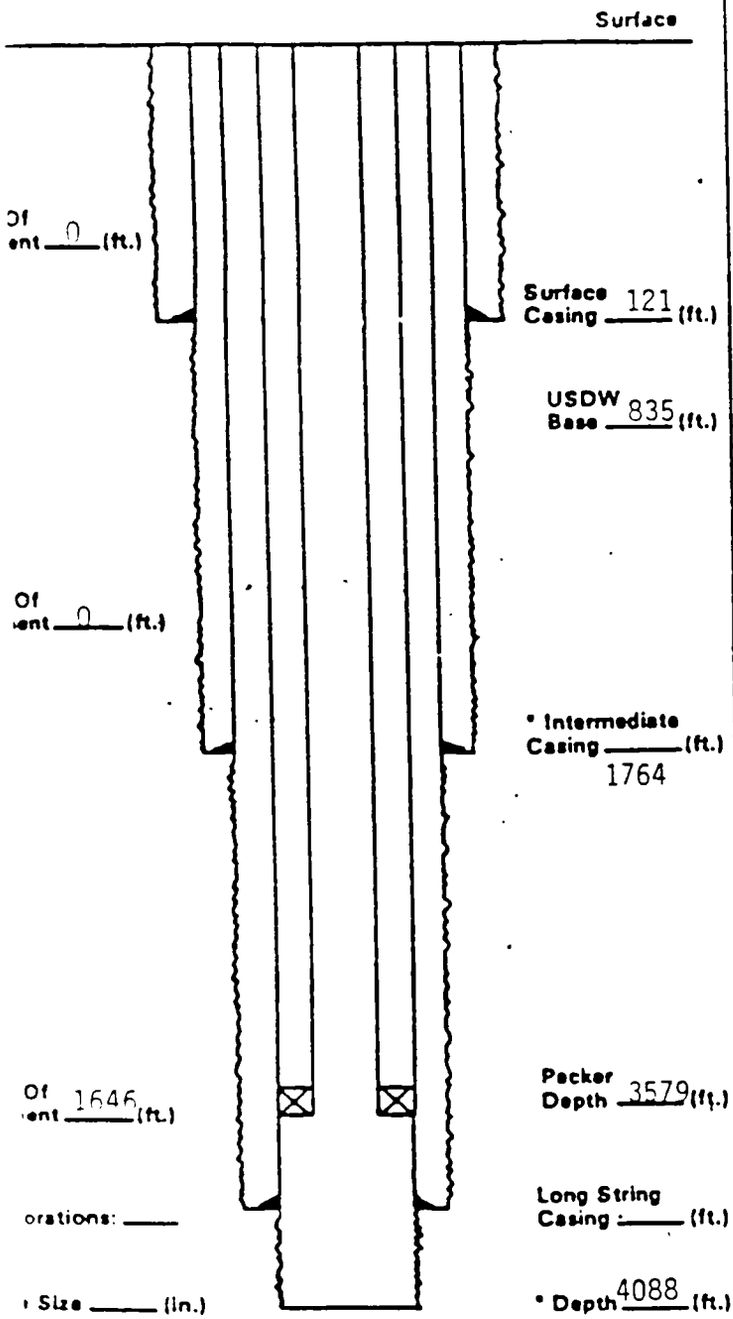
ESTIMATED COST OF PLUGGING AND ABANDONMENT $35,000

Cement	$	Cast Iron Bridge Plug	$
Logging	$	Cement Retainer	$
Rig or Pulling Unit	$	Miscellaneous	$

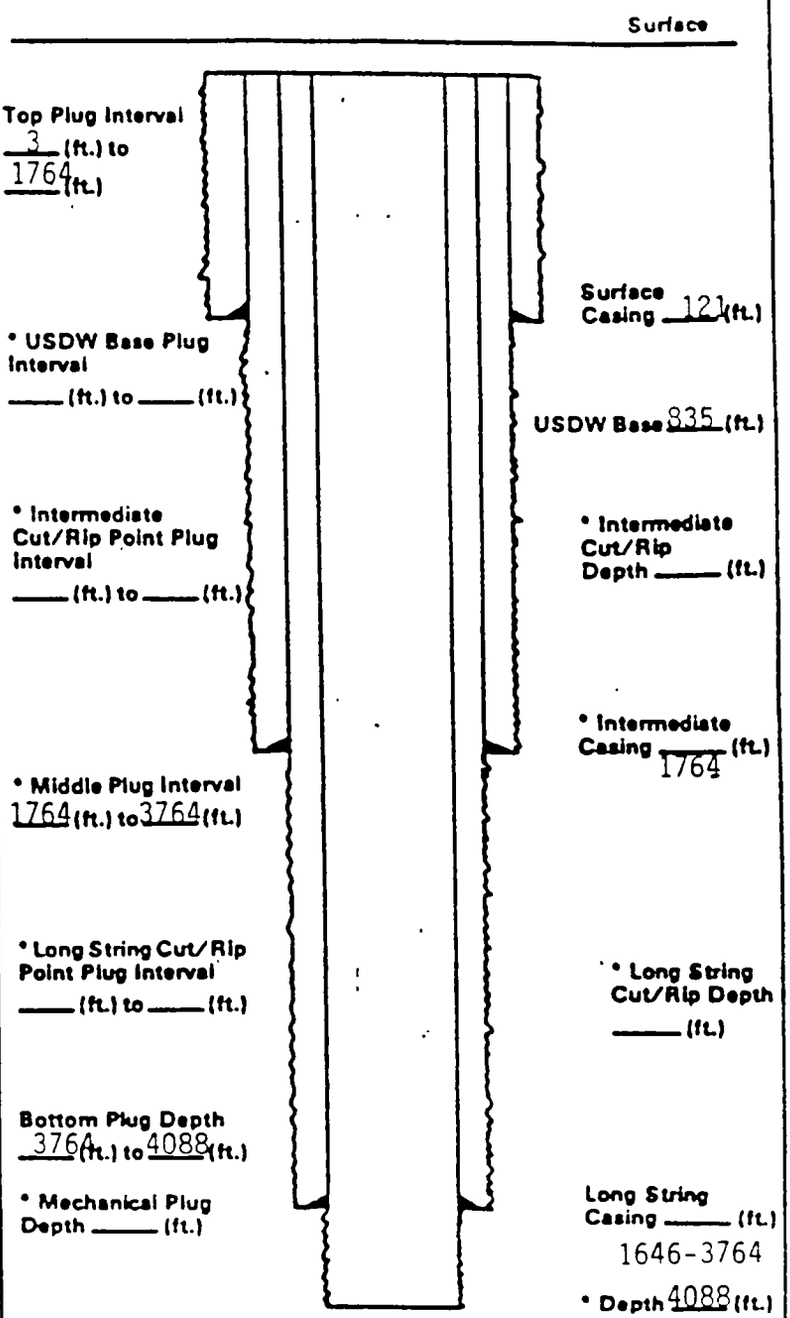
CERTIFICATION

I certify under the penalty of law that I have examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

NAME AND OFFICIAL TITLE (Please type or print)	SIGNATURE	DATE SIGNED
CARL CURRY ENV. MGR.	Carl Curry	2/20/90



dd Any Additional Information
ay Not Apply



** Add Any Additional Information
* May Not Apply

LIST OF ALL OPEN AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED

Open Hole/Perforations/Varied Casing	From	To	Formation Name
n Hole	3764'	4088'	Eau Claire & Mt. Simon
foration	3870'	3880'	"
erforation	3965'	3975'	"
erforation	4020'	4030'	"

CLOSURE PLAN
PLUGGING AND ABANDONMENT PROCEDURE FOR:
Deepwell #1 MI-163-1W-0003

1. Move in and rig up.

2. Pump 100 bbls. of 10 lb./gal. brine.

3. Dismantle the wellhead and mount blowout preventor.

4. Remove the injection tubing. If the packer will not unseat, cut the tubing with a tubing charge immediately above the packer. Remove and decontaminate the tubing as required.

5. Set cement retainer at the top of the injection zone.

6. Squeeze with Class "H" cement from top of injection zone to total depth.

   Cement volume to be open hole plus 25% excess.

7. Wait on cement for four (4) hours.

8. Pressure test retainer and cement to 500 psi for thirty (30) minutes and tag top of retainer to verify depth.

9. Balance Class "H" in stages from the top of injection zone to 3' below surface.

10. Rig down and move out.

11. Cut off the wellhead and casing 3' below ground level and weld a steel plate on top of the casing. The steel plate should be inscribed with waste disposal well identification and the date of plugging. Federal and State representatives will witness the plugging and will sign the plugging and abandonment form.

WELL NO. 1
NPDES NO. MI 0004430
MINERAL WELL PERMIT NO. 069-737-882

TRUST AGREEMENT, the "Agreement" entered into as of February 1, 1985 by and between Detroit Coke Corporation, a Michigan corporation, the "GRANTOR," and National Bank of Detroit, a national banking association, the "TRUSTEE."

WHEREAS, the United States Environmental Protection Agency, "EPA" an agency of the United States Government has established certain regulations applicable to the Grantor requiring that an owner or operator of an injection well shall provide assurance that funds will be available when needed for plugging and abandonment of the injection well.

WHEREAS, the Grantor has elected to establish a trust to provide all or part of such financial assurance for the facility identified herein.

WHEREAS, the Grantor, acting through his duly authorized officers, has selected the Trustee to be the trustee under this agreement and the Trustee is willing to act as trustee.

NOW, THEREFORE, the Grantor and the Trustee agree as follows:

Section 1. Definitions. As used in this Agreement:

(a) The term "Grantor" means the owner or operator who enters into this Agreement and any successors or assigns of the Grantor.

(b) The term "trustee" means the Trustee who enters into this Agreement and any successor Trustee.

(c) Facility or activity means any "underground injection well" or any other facility or activity that is subject to regulation under the Underground Injection Control Program.

Section 2. Identification of Facilities and Cost Estimates. This Agreement pertains to the facilities and cost estimates identified on attached Schedule A.

Section 3. Establishment of Fund. The Grantor and the Trustee hereby establish a trust fund, the "Fund" for the benefit of EPA. The Grantor and the Trustee intend that no third party have access to the Fund except as herein provided. The Fund is established initially as consisting of the property, which is acceptable to the Trustee described in Schedule A attached hereto. Such property subsequently transferred to the Trustee is referred to as the Fund together with all earnings and profits thereon, less any payments or distributions made by the Trustee pursuant to this Agreement. The Fund shall be held by the Trustee, IN TRUST, as hereinafter provided. The Trustee shall not be responsible nor shall it undertake any responsibility for the amount or adequacy of, nor any duty to collect from the Grantor, any payments necessary to discharge any liabilities of the Grantor established by EPA.

Section 4. Payment for Plugging and Abandonment. The Trustee shall make payments from the Fund as the EPA Regional Administrator shall direct, in writing, to provide

for the payment of the costs of plugging and abandonment of the injection wells covered by this Agreement. The Trustee shall reimburse the Grantor or other persons as specified by the EPA Regional Administrator from the Fund for plugging and abandonment expenditures in such amounts as the EPA Regional Administrator shall direct in writing, in addition, the Trustee shall refund to the Grantor such amounts as the EPA Regional Administrator specifies in writing. Upon refund, such funds shall no longer constitute part of the fund as defined herein.

Section 5. Payments Comprising the Fund.

Payments made to the Trustee for the Fund shall consist of cash or securities acceptable to the Trustee.

Section 6. Trustee Management.

The Trustee shall invest and reinvest the principle and income of the Fund and keep the Fund invested as a single fund, without distinction between principle and income in accordance with general investment policies and guidelines which the Grantor maycommunicate in writing to the Trustee from time to time, subject however to the provisions of this section in investing, reinvesting, exchanging, selling and managing the Fund, the Trustee shall discharge his duties with respect to the trust fund solely in the interest of the beneficiary and with the care, skill, prudence and diligence under the circumstances then prevailing which persons of prudence, acting in a like capacity and familiar with such matters would use in the conduct of an enterprise of a like character and with like aims, except that

(i) Securities or other obligations of the Grantor, or any other owner or operator of the facilities, or any of their affiliates as defined in the Investment Company Act of 1940, as amended, 15 USC [80a-2-(a)]shall not be acquired or held unless they are securities or other obligations of the Federal or a State government.

(ii)The Trustee is authorized to invest the Fund in time or demand deposit of the Trustee, to the extent insured by an agency of the Federal or State government, and

(iii) The Trustee is authorized to hold cash awaiting investment or distribution uninvested for a reasonable time and without liability for the payment of interest theron.

Section 7. Commingling and Investment.

The Trustee is expressly authorized in its discretion

(a) To transfer from time to time any or all of the assets of the Fund to any common, commingled or collective trust fund created by the Trustee in which the Fund is eligible to participate, subject to all of the provisions thereof, to be commingled with the assets of other trusts participating therein

and

(b) To purchase shares in any investment company registered under the Investment Company Act of 1940, 15 U.S.C., 80a-1 et seq- including one which may be created, managed, underwritten, or to which investment advice is rendered or the shares of which are paid by the Trustee. The Trustee may vote shares in its discretion.

Section 8. Express Powers of Trustee

Without in any way limiting the powers and discretion conferred upon the Trustee by the other provisions of this Agreement or by law, the Trustee is expressly authorized and empowered:

(a) To sell, exchange, convey, transfer, or otherwise dispose of any property held by it, by public or private sale. No person dealing with the Trustee shall be bound to see to the application of the purchase money or to inquire into the validity or expediency of any such sale or other disposition:

(b) To make, execute, acknowledge, and deliver any and all documents of transfer and conveyance and any and all other instruments that may be necessary or appropiate to carry out the powers herein granted:

(c) To register any securities held in the Fund in its own name or in the name of a nominee and to hold any security in bearer form or in book entry, or to combine certificates representing such securities with certificates of the same issue held by the Trustee in other fiduciary capacities, or to deposit or arrange for the deposit of such securities in a qualified central depository even though when so deposited, such securities may be merged and held in bulk in the names of the nominee of such depositary with other securities deposited therein by another person, or to deposit or arrange for the deposit of any securities issued by the United States Government, or any agency or instrumentality thereof, with a Federal Reserve bank, but the books and records of the Trustee shall at all times show that all such securities are part of the Fund:

(d) To deposit any cash in the Fund in interest bearing accounts maintained or savings certificates issued by the Trustee, in its separate corporate capacity, or in any other banking institution affiliated with the Trustee, to the extent insured by an agancy of the Federal or State government and

(e) To compromise or otherwise adjust all claims in favor of or against the Fund.

Section 9. Taxes and Expenses

All taxes of any kind that may be assessed or levied against or in respect of the Fund and all brokerage commissions incurred by the Fund shall be paid from the Fund. All other expenses

incurred by the Trustee in connection with the administration of this Trust, including fees for legal services rendered to the Trustees, the compensation of the Trustee to the extent not paid directly by the Grantor, and all other proper charges and disbursements of the Trustee shall be paid from the Fund.

Section 10. Annual Valuation

The Trustee shall annually, at least 30 days prior to the anniversary date of establishment of the Fund, furnish to the Grantor and to the appropriateEPA Regional Administrator a statement confirming the value of the Trust. Any securities in the Fund shall be valued at market value as of no more than 60 days prior to the anniversary date of establishment of the Fund. The failure of the Grantor to object in writing to the Trustee within 90 days after the statement has been furnished to the Grantor and the EPA Regional Administrator shall constitute a conclusively binding assent by the Grantor, barring the Grantor from asserting any claim or liability against the Trustee with respect to matters disclosed in the statement.

Section 11. Advice of Counsel

The Trustee may from time to time consult with counsel, who may be counsel to the Grantor, with respect to any questions arising as to the construction of this agreement of any action to be taken hereunder. The Trustee shall be fully protected to the extent permitted by law, in acting upon the advice of counsel.

Section 12. Trustee Compensation

The Trustee shall be entitled to reasonable compensation for its services as agreed upon in writing from time to time with the Grantor.

Section 13. Successor Trustee

The Trustee may resign or the Grantor may replace the Trustee, but such resignation or replacement shall not be effective until the Grantor has appointed a successor trustee and this successor accepts the appointment. The successor trustee shall have the same powers and duties as those conferred upon the Trustee hereunder. Upon the successor trustee's acceptance of the appointment, the Trustee shall assign, transfer, and pay over to the successor trustee the funds and properties then constituting the Fund. If for any reason the Grantor cannot or does not act in the event of the resignation of the Trustee, the Trustee may apply to a court of competent jurisdiction for the appointment of a successor trustee or for instructions. The successor trustee shall specify the date on which it assumes administration of the trust in a writing sent to the Grantor, the EPA Regional Administrator, and the present Trustee by certified mail 10 days before such change

becomes effective. Any expenses incurred by the Trustee as a result of any of the acts contemplated by this Section shall be paid as provided in Section 9.

Section 14. Instructions to the Trustee

All orders, requests, and instructions by the Grantor to the Trustee shall be in writing, signed by such persons as are designated in the attached Exhibit A or such other designees as the Grantor may designate by amendment to Exhibit A. The Trustee shall be fully protected in acting without inquiry in accordance with the Grantor's orders, requests and instructions. All orders, requests, and instructions by the EPA Regional Administrator to the Trustee shall be in writing, signed by the EPA Regional Administrators of the Regions in which the facilities are located, or their designees, and the Trustee shall act and shall be fully protected in acting in accordance with such orders, requests, and instructions. The Trustee shall have the right to assume in the absence of written notice to the contrary, that no event constituting a change or a termination of the authority of any person to act on behalf of the Grantor or EPA hereunder has occured. The Trustee shall have no duty to act in the absence of such orders, requests, and instructions from the Grantor and/or EPA, except as provided for herein.

Section 15. Notice of Nonpayment

The Trustee shall notify the Grantor and the appropriate EPA Regional Administrator, by certified mail within 10 days following the expiration of the 30-day period after the anniversary of the establishment of the Trust, if no payment is received from the Grantor during that period. After the pay-in period is completed, the Trustee shall not be required to send a notice of nonpayment.

Section 16. Amendment of Agreement

This Agreement may be amended by an instrument in writing executed by the Grantor, the Trustee, and the appropriate EPA Regional Administrator, or by the Trustee and the appropriate EPA Regional Administrator if the Grantor ceases to exist.

Section 17. Irrevocability and Termination

Subject to the right of the parties to amend this Agreement as provided in Section 16, this Trust shall be irrevocable and shall continue until terminated in the written agreement of the Grantor, the Trustee, and the EPA Regional Administrator, or by the Trustee and the EPA Regional Administrator if the Grantor ceases to exist. Upon termination of the Trust, all remaining trust property, less final trust administration expenses, shall be delivered to the Grantor.

Section 18. Immunity and Indemnification

The Trustee shall not incur personal liability of any nature in connection with any act or omission, made in good faith, in the

administration of this Trust, or in carrying out any directions by the Grantor or the EPA Regional Administrator issued in accordance with this Agreement. The Trustee shall be indemnified and saved harmless by the Grantor or from the Trust Fund, or both, from and against any personal liability to which the Trustee may be subjected by reason of any act or conduct in its official capacity, including all expenses reasonably incurred in its defense in the event the Grantor fails to provide such defense.

Section 19. Choice of Law

This Agreement shall be administered, construed and enforced according to the laws of the State of Michigan.

Section 20. Interpretation

As used in this Agreement, words in the singular include the plural and words in the plural include the singular. The descriptive headings for each Section of this Agreement shall not affect the interpretation or the legal efficacy of this Agreement.

IN WITNESS WHEREOF the parties have caused this Agreement to be executed by their respective officers duly authorized and their corporate seals to be hereonto affixed and attested as of the date first above written. The parties below certify that the wording of this Agreement is identical to the wording specified in 40 CFR 144.70 (a)(1) as such regulations were constituted on the date first above written.

DETROIT COKE CORPORATION

BY: _____ (SEAL)

D. O. JAMES, TREASURER

ATTEST: _____

TITLE Executive Vice President

NATIONAL BANK OF DETROIT

BY: _____ (SEAL)

TITLE SECOND VICE PRESIDENT

ATTEST: _____

TITLE VICE PRESIDENT AND DEPUTY CASHIER

SCHEDULE A

DETROIT COKE CORPORATION

Well No. 1
NPDES No. MI 0004430
Mineral Well Permit No. 069-737-882

OWNER

Detroit Coke Corporation
7839 W. Jefferson
Detroit, Michigan 48209

CURRENT PLUGGING AND ABANDONMENT COST ESTIMATE

$35,000

AUTHORIZED REPRESENTATIVES OF DETROIT COKE CORPORATION

J.D. Crane
D.O. James

STATE OF MICHIGAN
COUNTY OF WAYNE

On this 1st day of February, 1985, before me personally came D. O. James, to me known, who being by me duly sworn, did depose and say that he resides at 55 Marengo Street, Hamburg, New York 14075, that he is the Treasurer of Detroit Coke Corporation, the corporation described in and which executed the above instrument: that he knows the seal of said corporation: that the seal affixed to such instrument is such corporate seal: that it was so affixed by order of the Board of Directors of said corporation, and that he signed his name thereto by like order.

Mary Ann Quayhackx
Notary Public

MARY ANN QUAYHACKX
Notary Public, Macomb County, MI
My Commission Expires Nov. 13, 1985
Acting in Wayne County

Form 1041

Department of the Treasury
Internal Revenue Service

U.S. Fiduciary Income Tax Return

For the calendar year 1988 or fiscal year beginning ____ and ending ____

OMB No 1545-0092

1988

Check applicable boxes:
- ___ Decedent's estate
- ___ Simple trust
- ___ Complex trust
- X Grantor type trust
- ___ Bankruptcy estate
- ___ Family estate trust
- ___ Pooled income fund
- ___ Initial return
- ___ Amended return
- ___ Final return

Name of estate or trust (grantor type trust, see instructions)
DETROIT COKE CORPORATION-EPA TRUST
WELL NO. 1

Name and title of fiduciary
NATIONAL BANK OF DETROIT-TRUST DIVISION

Address of fiduciary (number and street or P.O. Box)
611 WOODWARD AVENUE

City, State, and ZIP code
DETROIT MICHIGAN 48226

Number of Schedules K-1 attached ▶

Employer identification number
38-6479060

Date entity created
02/01/85

Nonexempt charitable and split-interest trusts check applicable boxes
___ Described in section 4947(a)(1)
___ Not a private foundation
___ Described in section 4947(a)(2)

Income

1	Dividends	1
2	Interest income	2
3	Income (or losses) from partnerships, other estates or other trusts	3
4	Net rent or royalty income (or loss) (attach Schedule E (Form 1040))	4
5	Net business and farm income (or loss) (attach Schedules C and F (Form 1040))	5
6	Capital gain (or loss) (attach Schedule D (Form 1041))	6
7	Ordinary gain (or loss) (attach Form 4797)	7
8	Other income (state nature of income)	8
9	Total income (add lines 1 through 8) ▶	9

UNDER THE TERMS OF THE TRUST INSTRUMENT, THIS IS A GRANTOR TRUST. ALL INCOME IS TAXABLE TO THE GRANTOR AS SET FORTH UNDER SECTIONS 671-678 I.R.C. 1986. A STATEMENT OF INCOME, DEDUCTIONS, AND CREDITS IS ATTACHED.

Deductions

10	Interest	10	
11	Taxes	11	
12	Fiduciary fees	12	
13	Charitable deduction (from Schedule A, line 6)	13	
14	Attorney, accountant, and return preparer fees	14	
15	Other deductions	15	
16	Total (add lines 10 through 15) ▶		16
17	Adjusted total income (or loss) (Subtract line 16 from line 9)		17
18	Income distribution deduction (from Schedule B, line 17) (attach Sch K-1 (Form 1041))		18
19	Estate tax deduction (including generation-skipping transfer taxes) (attach computation)		19
20	Exemption		20
21	Total (add lines 18 through 20) ▶		21
22	Taxable income of fiduciary (subtract line 21 from line 17) ▶		22

Tax and Payments

23	Total tax (enter amount from line 7, Schedule G)	23
24a	Payments: 1988 estimated tax payments and amount applied from 1987 return	24a
b	Treated as paid by trust beneficiaries (attach Form 1041-T)	24b
c	Subtract line 24b from line 24a	24c
d	Tax paid with extension of time to file ☐ Form 8736 ☐ Form 8800 ☐ Form 2758	24d
e	Federal income tax withheld	24e
	Credits:	
f	Form 2439	24f
g	Form 4136	
h	Form 6249	
i	Total	
25	Total (add lines 24c through 24e, and 24f) ▶	25
26	If line 23 is larger than line 25, enter TAX DUE	26
27	If line 25 is larger than line 23, enter OVERPAYMENT	27
28	Amount of line 27 to be: a Credited to 1989 estimated tax ▶ ____ b Refunded ▶	28
29	Penalty for underpayment of estimated tax. Check ☐ if Form 2210 (Form 2210F) is attached	29

Under penalties of perjury, I declare that I have examined this return, including accompanying schedules and statements, and to the best of my knowledge and belief, it is true, correct, and complete. Declaration of preparer (other than fiduciary) is based on all information of which preparer has any knowledge.

Please Sign Here

BERNADINE T. LOEHER ▶

▶ Signature of fiduciary or officer representing fiduciary — Date — EIN of fiduciary

▶ Preparer's signature — Date — Check if self-employed ▶ ___ — Preparer's social security no. 093-50-1149

Paid Preparer's Use only

Firm's name (or yours if self-employed) and address
TOUCHE ROSS & CO.
MAIN-SENECA BUILDING, 237 MAIN ST.
BUFFALO, NEW YORK

E.I. No. ▶ 13-1939741
ZIP code ▶ 14203

TRUST DIVISION

PORTFOLIO SUMMARY BY MAJOR CATEGORY
AS OF DEC 31, 1989

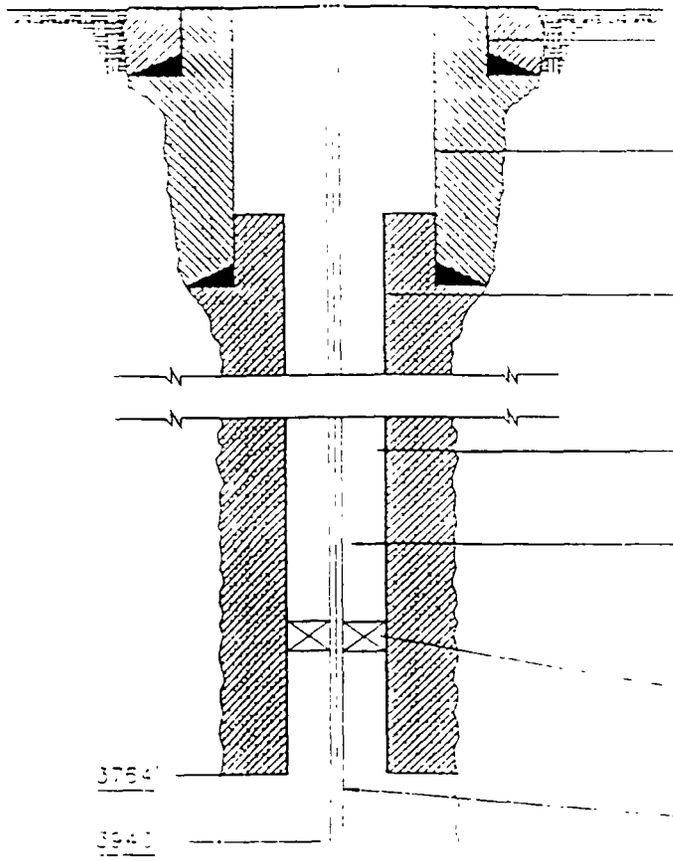
Send Inquiries To:
NBD Auditor
P O Box 330206
Detroit, Michigan 48232 6206

DETROIT COKE CORPORATION
EPA TRUST-WELL NO 1
TRUSTEE

TRUST NUMBER: 40 52214 00
ADMINISTRATIVE OFFICER: LOEHER

DESCRIPTION	AT COST AMOUNT	AT COST PER CENT	AT MARKET AMOUNT	AT MARKET PER CENT
CASH EQUIVALENTS	50,488.00	100.0	50,488.00	100.0
TOTAL MARKETABLE SECURITIES	50,488.00	100.0	50,488.00	100.0
PRINCIPAL CASH	15,488.00-	30.7-	15,488.00-	30.7-
INCOME CASH	15,488.35	30.7	15,488.35	30.7
TOTAL ASSETS	50,488.35	100.0	50,488.35	100.0

ATTACHMENT C



CONDUCTOR PIPE SET AT [illegible] FT
CEMENT TO SURFACE

5/8" O.D. 24 LB./FT. J-55
ARBON STEEL CASING SET TO 1764 FT
CEMENT TO SURFACE

5 1/2" O.D. 14 LB./FT. J-55
LINER SET FROM 1646 FT. TO
3764 FT. CEMENT CIRCULATED

10.0 LB./GAL. BRINE CONTAINING 15 GAL
CORBAN INHIBITOR, A/ DIESEL CAP

2 7/8" O.D. 6.5 LB./FT. J-55
INJECTION TUBING
SET TO 3943 FT

BAKER "LOK-SET" PACKER SET
IN COMPRESSION AT 3579 FT

2 7/8" O.D. TAIL PIPE

[illegible] HOLE FROM
3764 FT. TO 4059 FT

NOT TO SCALE

ALL DEPTHS REFERENCED TO [illegible]
DATA FROM LOGS WHICH [illegible]
HAVE BEEN CORRECTED [illegible]
KB = 13' AGL

KEN E. DAVIS ASSOCIATES

DETROIT COAL CORPORATION
DETROIT, MICHIGAN

WELL SCHEMATIC
WASTE DISPOSAL WELL NO. 1

DATE 12/11/87 CHECKED BY R F B JOB NO 36-1821
DRAWN BY D T APPROVED BY CMS DWG NO:

Operational History, Detroit Coke WDW No. 1

DATE	Event
5/25/69	Start drilling.
6/15/69	Finish drilling. TD 4112' RKB. Treatment by 5,000 gallons mud acid, and injection of 8,400,000 gallon buffer of fresh water. Commence waste injection.
1/20/70	Treatment by 5,000 gal of 15% HCl.
9/11/71	Fracture treatment with 46,000 lbs. of sand at average pressure 3500 psi.
1/15-22/74	Fracture treatment with 64,000 lbs. of sand at up to 3500 psi.
10/8-14/74	Perforation of 3870-80', 3965-75', 4020-4030'. Fracture treatment with 60,000 lbs. of sand. TD 4050' RKB.
2/22/75	Deepened with 4-3/4 inch hole to 4231' RKB.
8/17-29/77	Workover including liquid fracture treatment, fracture treatment with sand proppant, and acid treatment. TD measured 4133'.
10/19/77	Treatment with 4200 gal HCl.
10/16/78	Treatment with 1000 gal of 28% HCl.
11/3/78	Treatment with 1000 gal of 28% HCl.
6/7/79	Treatment with 2000 gal of HCl/HF acid.
7/19/79	Treatment with 2500 gal of HCl/HF acid.
9/27/79	Treatment with 2500 gal of HCl/HF acid.
11/20/79	Treatment with 2500 gal of HCl/HF acid.
11/11/80	Treatment with 2500 gal of HCl/HF acid.
7/8/81	Treatment with 2500 gal of HCl/HF acid.
10/29/84	Treatment with 2500 gal of HCl/HF acid.
4/29/87	Treatment with 2500 gal of HCl/HF acid.
7/87	Packer replacement/Mechanical Integrity test.
6/29-30/89	Annular pressure test.
6/30/89	Radioactive Tracer (RAT) test.

ATTACHMENT D

The permittee is permitted to inject rainwater that collects on site and waste ammonia liqour produced from coking operations conducted by Detroit Coke Corporation, Detroit, Michigan. Other fluids necessary for well testing, stimulation, workover or as buffer fluids may be injected when approved by the Director.

CLAYTON ENVIRONMENTAL CONSULTANTS INC.

Results of Analysis For DETROIT COKE CORPORATION

Project No.: 55467-
Lab No.: 708333
File No.: E4923
Sample Id.: AMMONIA LIQUOR

Volatile Compounds - Hazardous Substance List

COMPOUND NAME	CONCENTRATION (ug/L)	LOD (ug/L)
Acetone	1000	500
Acrylonitrile	<1000	1000
Benzene	12000	100
Bromodichloromethane	<100	100
Bromoform	<100	100
Bromomethane	<300	300
2-Butanone	<300	300
Carbon disulfide	<100	100
Carbon tetrachloride	<100	100
Chlorobenzene	<100	100
Chloroethane	<300	300
2-Chloroethylvinyl ether	<300	300
Chloroform	<100	100
Chloromethane	<300	300
Dibromochloromethane	<100	100
1,1-Dichloroethane	<100	100
1,2-Dichloroethene	<100	100
1,1-Dichloroethene	<100	100
trans-1,2-Dichloroethene	<100	100
1,2-Dichloropropane	<100	100
cis-1,3-Dichloropropene	<100	100
trans-1,3-Dichloropropene	<100	100
Ethyl benzene	<100	100
2-Hexanone	<300	300
Methylene chloride	200	100
4-Methyl-2-pentanone	<300	300
Styrene	<100	100
1,1,2,2-Tetrachloroethene	<100	100
Tetrachloroethene	<100	100
Toluene	2400	100
1,1,1-Trichloroethene	<100	100
1,1,2-Trichloroethene	<100	100
Trichloroethene	<100	100
Vinyl acetate	<300	300
Vinyl chloride	<300	300
Xylenes (total)	500	100

LOD: Limit of Detection

Analytical Method: EPA Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, Third Edition, Method 8240.

CLAYTON ENVIRONMENTAL CONSULTANTS INC.

Results of Analysis for: DETROIT COKE CORPORATON

Project No: 55467-17
Lab No: 708333
File No: F3752
Sample Id.: AMMONIA LIQUOR

Base Neutral Compounds - Hazardous Substance List

COMPOUND NAME	CONCENTRATION (ug/L)	LOD (ug/L)
Di-n-octylphthalate	<10000	10000
Fluoranthene	<10000	10000
Fluorene	<10000	10000
Hexachlorobenzene	<10000	10000
Hexachlorobutadiene	<10000	10000
Hexachlorocyclopentadiene	<10000	10000
Hexachloroethane	<10000	10000
Indeno(1,2,3-cd)pyrene	<10000	10000
Isophorone	<10000	10000
2-Methylnaphthalene	<10000	10000
Naphthalene	50000	10000
2-Nitroaniline	<50000	50000
3-Nitroaniline	<50000	50000
4-Nitroaniline	<50000	50000
Nitrobenzene	<10000	10000
N-Nitrosodi-n-propylamine	<10000	10000
N-Nitrosodiphenylamine	<10000	10000
Phenanthrene	<10000	10000
Pyrene	<10000	10000
1,2,4-Trichlorobenzene	<10000	10000

LOD: Limit of Detection

Analytical Method: EPA Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846 Third Edition, Method 8270

CLAYTON ENVIRONMENTAL CONSULTANTS INC.

Results of Analysis for: DETROIT COKE CORPORATION

Project No.: 55467-17
Lab No.: 708333
File No.: F3752
Sample Id.: AMMONIA LIQUOR

Acid Compounds - Hazardous Substance List

COMPOUND NAME	CONCENTRATION (ug/L)	LOD (ug/L)
Benzoic acid	<50000	50000
4-Chloro-3-methylphenol	<10000	10000
2-Chlorophenol	<10000	10000
2,4-Dichlorophenol	<10000	10000
2,4-Dimethylphenol	10000	10000
2,4-Dinitrophenol	<50000	50000
2-Methyl-4,6-dinitrophenol	<50000	50000
2-Methylphenol	60000	10000
4-Methylphenol	200000	10000
2-Nitrophenol	<10000	10000
4-Nitrophenol	<50000	50000
Pentachlorophenol	<50000	50000
Phenol	380000	10000
2,4,5-Trichlorophenol	<50000	50000
2,4,6-Trichlorophenol	<10000	10000

LOD: Limit of Detection

Analytical Method: EPA Test Methods for Evaluating Solid Waste
Physical/Chemical Methods, SW-846, Third Edition, Method 8270

CLAYTON ENVIRONMENTAL CONSULTANTS INC.

Results of Analysis for: DETROIT COKE CORPORATION

Project No.: 55467-17
Lab No.: 708333
File No.: F3752
Sample Id.: AMMONIA LIQUOR

Base Neutral Compounds - Hazardous Substance List

COMPOUND NAME	CONCENTRATION (ug/L)	LOD (ug/L)
Acenaphthene	<10000	10000
Acenaphthylene	<10000	10000
Anthracene	<10000	10000
Benzo(a)anthracene	<10000	10000
Benzo(b)fluoranthene	<10000	10000
Benzo(k)fluoranthene	<10000	10000
Benzo(a)pyrene	<10000	10000
Benzo(ghi)perylene	<10000	10000
Benzyl alcohol	<10000	10000
Benzyl butyl phthalate	<10000	10000
Bis(2-chloroethyl)ether	<10000	10000
Bis(2-chloroethoxy)methane	<10000	10000
Bis(2-chloroisopropyl)ether	<10000	10000
Bis(2-ethylhexyl)phthalate	<10000	10000
4-Bromophenyl phenyl ether	<10000	10000
4-Chloroaniline	<10000	10000
2-Chloronaphthalene	<10000	10000
4-Chlorophenyl phenyl ether	<10000	10000
Chrysene	<10000	10000
Dibenzo(a,h)anthracene	<10000	10000
Dibenzofuran	<10000	10000
Di-n-butylphthalate	<10000	10000
1,2-Dichlorobenzene	<10000	10000
1,3-Dichlorobenzene	<10000	10000
1,4-Dichlorobenzene	<10000	10000
3,3'-Dichlorobenzidine	<20000	20000
Diethyl phthalate	<10000	10000
Dimethyl phthalate	<10000	10000
2,4-Dinitrotoluene	<10000	10000
2,6-Dinitrotoluene	<10000	10000

LOD: Limit of Detection

Analytical Method: EPA Test Methods for Evaluating Solid Waste Physical/Chemical Methods, SW-846, Third Edition, Method 8270

EPA HW NUMBER	REG. LEVEL mg/l	PIT TANK DIKE	QUENCH BASIN	ROUND DIKE	BY-PRODUCTS AREA DRAINAGE	BY-PRODUCTS SQUARE DIKE	TAR LINE BASIN	COAL FINES RECOVERY BASIN
D004	5.0	<.1	<.1	<.1	<.1	<.1	<.1	<.1
D005	100.0	<.1	<.1	<.1	<.1	<.1	<.1	<.1
D006	1.0	<.05	<.05	<.05	<.05	<.05	<.05	<.05
D007	5.0	<.1	<.1	<.1	<.1	<.1	<.1	<.1
D009	5.0	<.1	<.1	<.1	<.1	<.1	<.1	<.1
D009	.2	<.01	<.01	<.01	<.01	<.01	<.01	<.01
D010	1.0	<.1	<.1	<.1	<.1	<.1	<.1	<.1
D011	5.0	<.02	<.02	<.02	<.02	<.02	<.02	<.02
D018	.5	.15	<.03	.08	.1	<.03	.08	<.03
D019	.5	<.03	<.03	<.03	<.03	<.03	<.03	<.03
D021	100.0	<.03	<.03	<.03	<.03	<.03	<.03	<.03
D022	6.0	<.02	<.03	<.03	<.03	<.03	<.03	<.03
D026	200.0	*	<1	<1	<1	<1	<1	<1
D027	7.5	<.2	<.2	<.2	<.2	<.2	<.2	<.2
D028	0.5	<.03	<.03	<.03	<.03	<.03	<.03	<.03
D029	0.7	<.03	<.03	<.03	<.03	<.03	<.03	<.03
D030	0.13	<.05	<.05	<.05	<.05	<.05	<.05	<.05
D032	0.13	<.05	<.05	<.05	<.05	<.05	<.05	<.05
D033	0.5	<.05	<.05	<.05	<.05	<.05	<.05	<.05
D034	3.0	<.05	<.05	<.05	<.05	<.05	<.05	<.05
D035	200.0	<.5	<.5	<.5	<.5	<.5	<.5	<.5
D036	2.0	<.05	<.05	<.05	<.05	<.05	<.05	<.05
D037	100.0	*	<5	<5	<5	<5	<5	<5
D038	5.0	.13	<.05	.11	.27	<.05	<.05	<.05
D039	0.7	<.03	<.03	<.03	<.03	<.03	<.03	<.03
D040	0.5	<.03	<.03	<.03	<.03	<.03	<.03	<.03
D041	400.0	*	<.5	<.5	<.5	<.5	<.5	<.5
D042	2.0	*	<.5	<.5	<.5	<.5	<.5	<.5
D043	0.2	<.05	<.05	<.05	<.05	<.05	<.05	<.05
Gallons		350000	118000	60000	10000	20000	20000	50000

* Unable to quantitate due to matrix interference

EPA HW NUMBER	CONSTITUENT	EPA HW NUMBER	CONSTITUENT
D004	ARSENIC	D028	1,2-DICHLOROETHANE
D005	BARIUM	D029	1,1-DICHLOROETHYLENE
D006	CADMIUM	D030	2,4-DINITROTOLUENE
D007	CHROMIUM	D032	HEXACHLOROBENZENE
D008	LEAD	D033	HEXACHLORO-1,3-BUTADIENE
D009	MERCURY	D034	HEXACHLOROETHANE
D010	SELENIUM	D035	METHYL ETHYL KETONE
D011	SILVER	D036	NITROBENZENE
D018	BENZENE	D037	PENTACHLOROPHENOL
D019	CARBON TETRACHLORIDE	D038	PYRIDINE
D021	CHLOROBENZENE	D039	TETRACHLOROETHYLENE
D022	CHLOROFORM	D040	TRICHLOROETHYLENE
D026	CRESOL/TOTAL	D041	2,4,5-TRICHLOROPHENOL
D027	1,4-DICHLOROBENZENE	D042	2,4,6-TRICHLOROPHENOL
		D043	VINYL CHLORIDE

ATTACHMENT E
CONTINUING RELEASES/CORRECTIVE ACTION

CONTINUING RELEASES/CORRECTIVE ACTION

A. BACKGROUND

The Hazardous and Solid Waste Amendments (HSWA) of 1984 contained requirements for corrective action of continuing releases. This provision is established in Section 3004(u) of the Act (Section 206 of HSWA). Section 3004(u) requires treatment, storage and disposal (TSD) facilities seeking Resource Conservation and Recovery Act (RCRA) permits to take corrective actions for all releases of hazardous waste or constituents from any solid waste management unit (SWMU) regardless of when the waste was placed in the SWMU. In order to fully appreciate the implications of the statutory requirements, the following definitions are made:

(1) Facility - defined as (1) All contiguous land, and structures, other appurtenances, and improvements on the land, used for treating, storing, or disposing of hazardous waste. A facility may consist of several treatment, storage, or disposal operational units (e.g., one or more landfills, surface impoundments, or combinations of them). (2) For the purpose of implementing corrective action under 264.101, all contiguous property under the control of the owner or operator seeking a permit under Subtitle C of RCRA.

(2) Corrective Action - As described in 40 CFR §264.100

(3) Releases - Any spilling, leaking, pouring, emitting, emptying, discharging, injecting, pumping, escaping, leaching, dumping, or disposing of hazardous wastes (including hazardous constituents) into the environment (including the abandonment or discarding of barrels, containers, and other closed receptacles containing hazardous wastes or hazardous constituents).

(4) SWMU - Any discernable unit at which solid wastes have been placed at any time, irrespective of whether the unit was intended for the management of solid or hazardous waste. Such units include any area at a facility at which solid wastes

have been routinely and systematically released.

B. CORRECTIVE ACTION AT THE FACILITY

In accordance with Section 3004(u) of RCRA and the regulations promulgated pursuant thereto, the Permittee must institute Corrective Action as necessary to protect human health and the environment for all releases of hazardous waste(s) or hazardous constituent(s) from any solid waste management units (SWMUs) at the facility, regardless of the time at which waste was placed in such units.

C. CORRECTIVE ACTION BEYOND THE FACILITY BOUNDARY

In accordance with Section 3004(v) of RCRA and the regulations promulgated pursuant thereto, the Permittee must implement Corrective Action(s) beyond the facility property boundary, where necessary to protect human health and the environment, unless the Permittee demonstrates to the satisfaction of the Regional Administrator that, despite the Permittee's best efforts, the Permittee was unable to obtain the necessary permission to undertake such actions. The Permittee is not relieved of all responsibility to clean up a release that has migrated beyond the facility boundary where off-site access is denied. On-site measures to address such releases will be addressed under the RCRA Facility Investigation, Corrective Measures Study, and Corrective Measures Implementation phases, as determined to be necessary on a case-by-case basis.

D. IDENTIFICATION OF SWMUs

A visual site inspection (VSI) of the Detroit Coke site has led to the determination that the facility has 21 SWMUs and 11 Areas of Concern (AOC). The need for corrective action for the SWMUs and AOCs was assessed as part of the RCRA Facility Assessment (RFA). The following SWMUs and AOCs were identified as requiring corrective action, which includes, at a minimum, further investigation to determine if a release has occurred and if so, the extent and nature of the contamination.

Unit Number	Unit Name
SWMU 1	Oil Pump Spray Area/Bulk Density Oil UST
SWMU 2	Coal Fines Recovery Basins and Coal Tar Recycling Area
SWMU 3	Ammonia Wash Tower

Unit Number	Unit Name
SWMU 5	#1 and #2 Liquor Storage Tanks
SWMU 6	#3 Liquor Storage Tank
SWMU 11	#10, #12, and #13 Tar Storage Tanks
SWMU 12	Tar Pumping Trench
SWMU 13	Containment Area by Tar Pump House
SWMU 15	Diesel Fuel Tank
SWMU 18	Flare Stack
SWMU 19	Round Containment
SWMU 20	Drum Storage Area
SWMU 21	Past Secondary Containment Area

The following SWMUs and AOCs were identified during the RFA, but are not subject to corrective action at this time.

Unit Number	Unit Name
SWMU 4	Flushing Liquor Tanks
SWMU 7	#1 Waste Disposal Well
SWMU 8	#2 Waste Disposal Well
SWMU 9	#3 Waste Disposal Well
SWMU 10	Tar Decanter Area
SWMU 16	Tank Near Pre-Heat Unit
SWMU 17	Coke Oven Gas Condensate Sumps
AOC 1	Coal Unloading/Storage Area
AOC 2	Oil Spray Area of Conveyor Belt
AOC 3	Pre-Heat Coal Fines Recovery Basin
AOC 4	Quench Tower
AOC 5	Quench Water Recycle Sump
AOC 6	Septic Tank
AOC 7	Outfall 001
AOC 8	Outfall for Parking Lot Drain
AOC 9	Half of Tanker Car
AOC 10	Former Pile Area
AOC 11	Vehicle Maintenance Building

The RFA Visual Site Inspection report, part of the administrative record for this permit, contains descriptions, as well as a map showing the locations, of all SWMUs and AOCs identified at the Detroit Coke Facility.

E. NEWLY IDENTIFIED SWMUs OR RELEASES

1. General Information

The Permittee shall notify the Regional Administrator, within 30 days of discovery, of the following information requirements for any new SWMU identified at the facility, in accordance with 40 CFR 270.14(d):

a. The location of the unit on the site topographic map;

b. Designation of the type of unit;

c. General dimensions and structural description (supply any available drawings);

d. When the unit was operated; and

e. Specifications of all waste(s) that have been managed at the unit.

2. Release Information

The Permittee must submit to the Regional Administrator, within 30 days of discovery, all available information pertaining to any release of hazardous waste(s) or hazardous constituent(s) from any new or existing SWMU.

F. CORRECTIVE ACTION FOR NEWLY IDENTIFIED SWMUs AND RELEASES

The Regional Administrator will review the information provided in Condition E above, and may as necessary require further investigations or corrective measures. The Permittee shall submit a written RCRA Facility Investigation Release Assessment Work Plan to the Regional Administrator within 60 days after written notification by the Regional Administrator that further investigation is necessary.

G. CORRECTIVE ACTION ACTIVITIES

1. RCRA Facility Investigation (RFI) Release Assessment

The Permittee shall conduct an RFI Release Assessment to document the absence or presence of hazardous waste or hazardous constituents from all SWMUs requiring further investigation as identified in Condition D above. The major tasks and required submittal dates are shown below. Additional tasks and associated submittal dates may also be specified in the Schedule of Compliance found in Attachment H of this permit. The scope of work for each of the tasks is found in Attachment F (Corrective Action Plan Scope of Work).

a. RFI Release Assessment Workplan

The Permittee shall submit a written RFI Release Assessment Workplan to the Regional Administrator within 120 days after the effective date of this permit modification.

The Regional Administrator will approve, modify and approve, or disapprove, and provide comments on the Workplan in writing to the Permittee. Within 60 days of receipt of such comments, the Permittee must modify the Workplan, so as to reflect the changes required in the Regional Administrator's comments, or submit a new workplan for the Regional Administrator's approval.

b. RFI Release Assessment Implementation

Within 30 days of the Regional Administrator's written approval of the RFI Release Assessment Workplan, the Permittee shall implement the RFI Release Assessment Workplan according to the terms and schedule in the approved RFI Release Assessment Workplan.

c. RFI Release Assessment Final Report

Within 60 days after the completion of the RFI Release Assessment, the Permittee shall submit an RFI Release Assessment Final Report to the Regional Administrator. The RFI Release Assessment Final Report shall describe the procedures, methods, and results of the RFI Release Assessment. The Final Report must contain adequate information to support further corrective action decisions at the facility, including the Permittee's recommendations for an RFI, if any.

After the Permittee submits the RFI Release Assessment Final Report, the Regional Administrator shall either approve or disapprove the Report in writing. If the Regional Administrator disapproves the Report, the Regional Administrator shall notify the Permittee in writing of the deficiencies and specify a due date for submittal of a revised Report.

2. Determination of No Further Action

a. Permit Modification

After completion of and based on the results of the RFI Release Assessment and other relevant information, the Permittee may submit an application to the Regional Administrator for a Class 3 permit modification under 40 CFR 270.42(c) to terminate the Corrective Action tasks of the Schedule of Compliance. Other tasks identified in the Schedule of Compliance shall remain in effect. This permit modification must demonstrate that there are no releases of hazardous wastes (including hazardous constituents) from SWMUs at the facility that may pose a threat to human health or the environment.

If, based upon review of the Permittee's request for a permit modification, the results of the RFI Release Assessment, the RFI, reports submitted under the Corrective Action Program, or other information, including comments received during the 60-day public comment period required for Class 3 permit modifications, the Regional Administrator determines that there is no such threat to human health or the environment from releases from solid waste management units at the facility, the Regional Administrator shall grant the permit modification.

b. Periodic Monitoring

A determination of no further action shall not preclude the Regional Administrator from requiring the permittee to perform such investigations and studies as may be necessary to comply with the corrective action requirements, if new information or subsequent analysis indicates that there are, or are likely to be, releases from solid waste management units at the facility that may pose a threat to human health or the environment; or require continued or periodic monitoring under the terms of the permit if the Regional Administrator determines, based on site-specific circumstances, that releases are likely to occur.

c. Further Investigations

A determination of no further action shall not preclude the Regional Administrator from requiring further investigations, studies, or remediation at a later date, if new information or subsequent analysis indicates that a release or likelihood of a release from a SWMU at the facility is likely to pose a threat to human health or the environment. In such a case, the Regional Administrator shall initiate a modification to the Corrective Action Schedule of Compliance to rescind the determination made in accordance with Condition G.2.a. Additionally, the Regional Administrator may determine that there is insufficient information on which to base a determination, and may require the Permittee to perform additional investigations as needed to generate the needed information.

3. RCRA Facility Investigation (RFI)

The Permittee shall conduct an RFI to evaluate thoroughly the nature and extent of the release of hazardous waste(s) or hazardous constituent(s) from all applicable SWMUs identified in the RFI Release Assessment. The major tasks and required submittal dates are shown below. Additional tasks and associated submittal dates may also be specified in the Schedule of Compliance found in Attachment H of this permit. The scope of work for each of the tasks is found in Attachment F (Corrective Action Plan Scope of Work).

a. RFI Workplan

The Permittee shall submit a written RFI Workplan to the Regional Administrator within 120 days after receiving EPA's approval of the RFI Release Assessment Final Report.

The Regional Administrator will approve, modify and approve, or disapprove, and provide comments on the Workplan in writing to the Permittee. Within 60 days of receipt of such comments, the Permittee must modify the Workplan, so as to reflect the changes required in the Regional Administrator's comments, or submit a new workplan for the Regional Administrator's approval.

b. RFI Implementation

Within 30 days of the Regional Administrator's written approval of the RFI Workplan, the Permittee shall implement the RFI Workplan according to the terms and schedule in the approved RFI Workplan.

c. RFI Final Report

Within 60 days after the completion of the RFI, the Permittee shall submit an RFI Final Report to the Regional Administrator. The RFI Final Report shall describe the procedures, methods, and results of the RFI. The Final Report must contain adequate information to support further corrective action decisions at the facility, including the Permittee's recommendations for a Corrective Measures Study, if any.

After the Permittee submits the RFI Final Report, the Regional Administrator shall either approve or disapprove the Report in writing. If the Regional Administrator disapproves the Report, the Regional Administrator shall notify the Permittee in writing of the deficiencies and specify a due date for submittal of a revised Report.

4. Corrective Measures Study (CMS)

If the Regional Administrator determines, based on the results of the RFI and other relevant information, that corrective measures are necessary, the Regional Administrator will notify the Permittee in writing that the Permittee shall conduct a CMS. The purpose of the CMS will be to develop and evaluate the corrective action alternative(s) and to outline one or more alternative corrective measure(s) which will satisfy the performance objectives specified by the Regional Administrator. The major tasks and required submittal dates are shown below. Additional tasks and associated submittal dates may also be specified in the Schedule of Compliance found in Attachment H of this permit. The Scope of Work for each of the tasks is found in Attachment F (Corrective Action Plan Scope of Work).

a. CMS Workplan (Plan)

The Permittee shall submit a written CMS Work Plan (Plan) to the Regional Administrator within 120 days from the notification of the requirement to conduct a CMS.

The Regional Administrator will approve, modify and approve, or disapprove and provide comments on the Plan in writing to the Permittee. Within 60 days of receipt of such comments, the Permittee must modify the Plan, so as to reflect the changes required in the Regional Administrator's comments, or submit a new plan for the Regional Administrator's approval.

b. CMS Implementation

Within 30 days of the Regional Administrator's written approval of the CMS Plan, the Permittee shall implement the CMS Plan according to the terms and schedule in the approved CMS Plan.

c. CMS Final Report

Within 60 days after the completion of the CMS, the Permittee shall submit a CMS Final Report to the Regional Administrator. The CMS Final Report shall summarize the results of the investigation for each remedy studied, include an evaluation of each remedial alternative, and present the Permittee's recommendations for corrective measures.

After the Permittee submits the CMS Final Report, the Regional Administrator shall either approve or disapprove the Report in writing. If the Regional Administrator disapproves the Report, the Regional Administrator shall notify the Permittee in writing of the deficiencies and specify a due date for submittal of a revised Report.

5. Corrective Measures Implementation (CMI)

Based on the results of the CMS, the Regional Administrator shall select one or more of the Corrective Measures in the CMS, and shall notify the Permittee in writing of the decision. The Regional Administrator's selection, except as otherwise provided for conditional remedies, will be based

upon long-term reliability and effectiveness; reduction of toxicity, mobility, or volume; short-term effectiveness of a potential remedy(s); implementability, and cost. The Regional Administrator may select a conditional remedy that protects human health and the environment under plausible exposure conditions during the term of the permit.

a. Permit Modification

The Regional Administrator will initiate a major permit modification, as provided by 40 CFR 270.41, to require implementation of the corrective measure(s) selected.

b. Financial Assurance

As part of the permit modification of this permit to incorporate CMI, the Permittee shall provide financial assurance in the amount specified by the Regional Administrator for necessary corrective action activities as required by 40 CFR 264.101(b) and (c).

H. DISPUTE RESOLUTION

1. If the Permittee disagrees, in whole or in part, with the U.S. EPA'S disapproval or modification of any submission required by Condition G of the permit, the Permittee shall notify the U.S. EPA of its objections by providing the Region 5 Associate Division Director, Waste Management Division, Office of RCRA, with a written statement of position within 14 days of receipt of the U.S. EPA's disapproval or modification. The Permittee's statement of position shall set forth the specific matters in dispute, the position that the Permittee asserts should be adopted as consistent with the requirements of this permit, the basis for the Permittee's position, and shall include any supporting documentation.

2. The U.S. EPA and the Permittee shall have an additional 14 days from the U.S. EPA's receipt of the Permittee's statement of position to meet or confer to attempt to resolve the dispute. If agreement is reached, the Permittee shall submit a revised submission, if necessary, and shall implement the submission in accordance with such agreement.

3. If the U.S. EPA and the Permittee are not able to reach agreement within the 14-day period, the Regional Administrator, Region 5, or his or her delegate will thereafter issue a written decision resolving the dispute, and the Permittee shall comply with the terms and conditions of the U.S. EPA's decision resolving the dispute.

4. Notwithstanding the invocation of this dispute resolution procedure, the Permittee shall proceed to take any action required by those portions of the submission and of the permit that the U.S. EPA determines are not substantially affected by the dispute.

ATTACHMENT F
CORRECTIVE ACTION SCOPE OF WORK

Corrective Action Scope of Work

The corrective action requirements for the Permittee are specified in Attachment E of this permit. The corrective action for the facility includes discrete elements. The scope of work for each of the elements is specified below. All workplans and final reports are subject to approval by the U.S. EPA.

I. RCRA Facility Investigation (RFI)

The purpose of the RFI is to evaluate thoroughly the nature and extent of the release of hazardous waste and hazardous constituents and to gather screening data to support the corrective measure study.

A. RFI Release Assessment

The Permittee shall prepare a RCRA Facility Investigation (RFI) Release Assessment Workplan to document the absence or presence of hazardous waste or hazardous constituents at each Solid Waste Management Unit listed in Attachment E, Condition D of the permit. The RFI Release Assessment Workplan shall include the following:

1. Project Management Plan

The Permittee shall prepare a Project Management Plan which shall include a discussion of the technical approach, schedules, and personnel. The Project Management Plan shall evaluate each SWMU based on its actual or potential threat to human health and the environment and prioritize the investigatory and/or remedial activities accordingly. The Project Management Plan shall also include a description of qualifications of personnel performing or directing the RFI Release Assessment, including contractor personnel. This plan shall also document the overall management approach to the RFI Release Assessment.

2. Data Collection Quality Assurance Plan

The Permittee shall prepare a plan to document all monitoring procedures including sampling, field measurements and sample analysis performed during the assessment to characterize the environmental setting, source and contamination, so as to ensure that all information, data and resulting decisions are technically sound, statistically valid, and properly documented.

The Data Collection Quality Assurance Plan shall include, but not be limited to, the following:

a. Data Collection Strategy - This section shall include the level of precision and accuracy for all data (factors which should be considered include the environmental conditions at the time of sampling, number of sampling points, and the representatives of selected media and selected analytical parameters), a description of methods and procedures to assess the precision, accuracy and completeness of the measurement data, a description of the measures to be taken to assure that data generated by the Permittee and outside laboratories or consultants during the RFI Release Assessment can be compared to each other.

b. Sample Collection - This section shall include a discussion of; selecting appropriate sampling locations (depth, etc.), determining which media are to be sampled (e.g., groundwater, air, soil, sediment, etc.), determining which parameters are to be measured and where, selecting the frequency of sampling and length of sampling period, selecting the type of samples (e.g., composites versus grabs) and number of samples to be collected, measures to be taken to prevent contamination of the sampling equipment and cross contamination between sampling points, selecting appropriate sample containers, sample preservation, chain-of-custody (e.g., standardized field tracking reporting forms to establish sample custody in the field prior to and during shipment as well as prepared sample labels containing all information necessary for effective sample tracking), and documenting field sampling operations and procedures.

c. Field Measurements - This section shall include a discussion of; selecting appropriate field measurements (locations, depth, etc.), measuring all necessary ancillary data, determining conditions under which field measurements should be conducted, determining which media are to be addressed by appropriate field measurements (e.g., groundwater, air, soil, sediment, etc.), determining which parameters are to be measured and where, selecting the frequency of field measurements and length of field measurements period, and documenting field measurements and

procedures.

d. Sample Analysis - This section shall specify chain-of-custody procedures, sample storage procedures and storage times; sample preparation methods; analytical procedures (i.e., scope and application of the procedure, sample matrix, potential interferences, precision and accuracy of the methodology, and method detection limits); calibration procedures and frequency; data reduction, validation and reporting; preventative maintenance procedures and schedules; corrective action (for laboratory problems); turnaround time; and internal quality control checks, laboratory performance and systems audits and frequency.

3. Data Management Plan

The Permittee shall develop and initiate a Data Management Plan to document and track assessment data and results. This plan shall identify and set up data documentation materials and procedures, project file requirements, and project-related progress reporting procedures and documents. The plan shall also provide the format to be used to present the raw data and conclusions of the assessment. The Data Management Plan shall include the following:

a. Data Records - This section shall include; unique sample or field measurement code, sampling or field measurement location and sample or measurement type, sampling or field measurement raw data, laboratory analysis ID number, and result of analysis.

b. Tabular Display - This section shall present; raw data, results from each medium or each constituent monitored, data reduction for statistical analysis, sorting of data by potential stratification factors (e.g., location, soil layer, topography), and summary data.

c. Graphical Format - This section shall describe: sampling location and sampling grid; boundaries of sampling area, and areas where additional data are required; levels and extent of contamination at each sampling location; contamination levels, averages, and maxima;

changes in concentration in relation to distance from the source, time, depth, or other parameters; and features affecting intramedia transport and potential receptors.

4. Health and Safety Plan

The Permittee's RFI Release assessment Workplan shall include a Health and Safety Plan covering activities to be conducted during the assessment. This plan shall be consistent with all applicable U.S. EPA, OSHA, NIOSH, State and local requirements and regulations, and the conditions of this permit.

5. Release Assessment

The Permittee shall conduct the necessary assessments to document the absence or presence of hazardous wastes or constituents at those areas listed in Attachment E, Condition D of the permit.

The assessments shall result in data of adequate technical quality to support the determination of whether there is a need to implement a RCRA Facility Investigation.

The Release Assessment activities shall follow the plans set forth in Part I.A. of this Scope of Work. All sampling and analysis shall be conducted in accordance with the Data Collection Quality Assurance Plan. All sampling locations shall be documented in a log and identified on a detailed site map.

6. Assessment Analysis

The Permittee shall prepare an analysis and summary of all facility assessments and results. The objective of this element shall be to ensure that the assessment data are sufficient in quality and quantity to support the determination of whether it is necessary to implement an RFI.

The Permittee shall analyze all release assessment data and prepare a report on the type and known extent of contamination at each solid waste management unit. The report shall describe the contamination (qualitative/quantitative) in relation to background levels indicative of the area and in relation to potentially applicable 'action levels' and 'media cleanup standards'.

7. Determination of Further Investigation

Based on the data analysis from the RFI Release Assessment, the Permittee shall provide recommendations on which solid waste management units require further investigation under Part I.B. of this Scope of Work.

B. RFI Workplan

Within 120 calendar days of receipt of EPA's approval of the RFI Release Assessment Final Report recommending an RFI, the Permittee shall submit to EPA, for approval, an RFI Work Plan for the applicable solid waste management units. During the RCRA Facility Investigation, it may be necessary to revise the Workplan to increase or decrease the detail of information collected to accommodate site specific needs. The RFI Workplan includes the following:

1. Facility Background

The Permittee's RFI Workplan shall summarize existing information about the facility that will aid in determining the nature and extent of contamination at the facility and beyond the facility boundary. This information shall be used to develop a conceptual model that is a narrative and graphical description of the site, the pollutants and the behavior of the pollutants at the site. The model will help to visualize where the problem may exist and facilitate the selection of corrective measures, including the remediation of existing contamination and the prevention of future contamination. The conceptual model shall address the release source(s), the release mechanism(s), specific contaminants and the distribution of contaminants, pathways of contamination migration, actual or potential receptors including on-site and adjacent ecosystems, and exposure routes. This model may be modified as additional information is collected.

The Permittee shall describe the following specific information:

a. A summary of the facility's regional location, pertinent boundary features, drainage basin and general facility physiography.

b. A summary of the environmental setting at and

adjacent to the facility, including geology, hydrogeology, hydrology, and meteorology, wildlife and vegetative community.

c. Maps depicting the following:

(1) General geographic location;

(2) Property lines, with the owners of all adjacent property clearly indicated;

(3) Topography and surface drainage depicting all soil profiles, waterways, wetlands, floodplains, water features, drainage patterns, and surface water areas;

(4) All tanks, buildings, utilities, paved areas, easements, rights-of-way, and other features;

(5) All solid or hazardous waste treatment, storage or disposal units active after November 19, 1980;

(6) All known past solid or hazardous waste treatment, storage or disposal areas regardless of their dates of operation;

(7) All known past and present product and waste underground tanks or piping;

(8) Surrounding land uses;

(9) The location of all nearby production, recovery, and groundwater monitoring wells;

(10) Terrestrial habitat cover - types (i.e., vegetation communities) with emphasis on locating natural (undisturbed) areas; and

(11) Wildlife nesting and foraging locations for locally "uncommon" mammals, birds, fish, benthos, etc. Threatened and endangered species possibly on or near the site should be identified as early as possible.

All maps shall be consistent with the requirements of 40 CFR 270.14 and be of sufficient detail and accuracy to locate and report all current and future work performed at

the site.

d. A history and description of ownership and operation, solid and hazardous waste generation, treatment, storage and disposal activities at the facility;

e. A summary of past permits requested and/or received, any enforcement actions and the subsequent responses and a list of documents and studies prepared for the facility along with a brief summary of their findings;

f. A summary of all possible source areas of contamination. At a minimum, this should include all regulated units, solid waste management units identified in Attachment E, Condition D of the facility's permit, any additional solid waste management units, spill areas, and other suspected source areas of contamination including any observed effects to biota (i.e., fish kills, stressed vegetation, or other obvious impacts).

For each area the Permittee shall identify the following:

(1) Location of unit/area;

(2) Quantities of solid and hazardous wastes;

(3) Hazardous waste or constituents, to the extent known;

(4) Approximate dates or periods of past spills, identification of the materials spilled, the amount spilled, the location, and a description of the response actions, including any inspection reports or technical reports generated as a result of the spill;

(5) Available monitoring data and qualitative information on locations and levels of contamination at the facility; and

(6) Habitats and species (including threatened and endangered species) potentially exposed to contaminants, and any known or observed effects of site contaminants on biota, such as fish kills or other obvious impacts.

Habitat description should be based on available information and a field reconnaissance by a trained ecologist. Experts on local flora and fauna should also be consulted.

g. A report on all interim measures which were or are being undertaken at the facility. This shall include:

(1) Objectives of the interim measures: how the measure is mitigating a potential threat to human health and the environment and/or is consistent with and integrated into any long term solution at the facility;

(2) Design, construction, operation, and maintenance requirements;

(3) Schedules for design, construction and monitoring; and

(4) Schedule for progress reports.

2. Potential Corrective Measure Technologies

Based on the existing information in Part I.B.1. above, the Permittee's RFI Workplan shall identify:

a. The potential corrective measure technologies that may be used at the facility or beyond the boundaries of the facility to respond to releases of hazardous waste or hazardous constituents at or from the facility; and

b. Any field, laboratory, bench-scale or pilot-scale data that needs to be collected in the RFI to facilitate the evaluation and selection of the final corrective measure(s), if any, for releases at or from the facility (e.g., compatibility of waste and construction materials, information to evaluate effectiveness, treatability of waste, etc.).

3. Project Management Plan

The Permittee's RFI Workplan shall include a Project Management Plan which shall document the overall management approach to the RFI. The plan shall include:

a. A discussion of the technical approach;

b. Schedules of activities;

c. A description of the qualifications of personnel directing the RFI, including contractor personnel; and

d. Provision for submittal of periodic (e.g., monthly or quarterly) progress reports which shall, at a minimum, include:

(1) A description and estimate of the percentage of the RFI completed;

(2) Summaries of all findings;

(3) Summaries of all changes made in the RFI during the reporting period;

(4) Summaries of all contacts with the public regarding the RFI;

(5) Summaries of all problems or potential problems encountered during the reporting period;

(6) Actions being taken to rectify problems;

(7) Changes in personnel during the reporting period;

(8) Projected work for the next reporting period; and

(9) Copies of daily reports, inspection reports, laboratory and monitoring data, etc.

4. Facility Investigation Plan

The Permittee's RFI Workplan shall include a Facility Investigation Plan which discusses those investigations necessary to: characterize the environmental setting at the facility; define the source; define the degree and extent of contamination; and identify actual or potential receptors.

This information shall be used to verify and further develop the conceptual model of the nature and extent of contamination at the facility.

The investigation should also result in data of adequate technical quality to support the development and evaluation of the corrective measures alternative(s). The Permittee shall collect information to supplement and verify the existing information described in Part I.B.1.b. above on the environmental setting at the facility. The Permittee shall characterize the following:

a. Environmental Setting Investigation

(1) Hydrogeology;

The Permittee shall conduct a program to evaluate hydrogeologic conditions at the facility. This program shall provide the following information, as appropriate:

(a) A description of the regional and facility specific geologic and hydrogeologic characteristics affecting groundwater flow beneath the site, including:

(i) Regional and facility specific stratigraphy;

(ii) Structural geology: description of local and regional structural features;

(iii) Depositional history;

(iv) Identification and characterization of areas and amount of recharge and discharge;

(v) Regional and facility specific groundwater flow patterns; and

(vi) Temporal variations in the groundwater flow regime.

(b) An analysis of any topographic features that might influence the groundwater flow system;

(c) Based on field data, tests, and cores, a representative and accurate classification and description of the

hydrogeologic units which may be part of the migration pathways at the facility, including:

(i) Hydraulic conductivity (horizontal and vertical) and porosity (total and effective);

(ii) Lithology grain size, sorting, degree of cementation;

(iii) An interpretation of hydraulic interconnection between saturated zones; and

(iv) The attenuation capacity and mechanisms of the natural earth materials.

(d) Based on field studies and cores, structural geology and hydrogeologic cross sections showing the extent of hydrogeologic units which may be part of the migration pathways, identifying:

(i) Sand and gravel deposits in unconsolidated deposits;

(ii) Zones of fracturing or channeling in consolidated or unconsolidated deposits;

(iii) Zones of higher or lower permeability that might direct or restrict the flow of contaminants;

(iv) Aquifers: A geologic formation, group of formations, or part of a formation capable of yielding a significant amount of groundwater to wells or springs; and

(v) Water-bearing zones above the first confining layer that may serve as a pathway for contaminants migration including perched zones of saturation.

(e) Based on data obtained from groundwater monitoring wells and piezometers installed upgradient and downgradient of the potential contaminant source, a representative description of water level or fluid pressure monitoring including:

(i) Water level contour and/or potentiometric maps;

(ii) Hydrologic cross sections showing vertical gradients;

(iii) The flow system, including the vertical and horizontal components of flow; and

(iv) Any temporal changes in hydraulic gradients due to seasonal or other influences.

(f) A description of manmade influences that may affect the hydrogeology of the site, identifying:

(i) Active and inactive local water supply and production wells with an approximate schedule of pumping; and

(ii) Manmade hydraulic structures (pipelines, french drains, ditches, unlined ponds, septic tanks, NPDES outfalls, etc.).

(2) Soils

The Permittee shall conduct a program to characterize the soil and rock units above the water table in the vicinity of the contaminant release(s). Such characterization shall consider, but not be limited to, the following information, as appropriate:

(a) SCS soil classification;
(b) Surface soil distribution;
(c) Soil profile, including ASTM

classification of soils;
(d) Transects of soil stratigraphy;
(e) Hydraulic conductivity (saturated and unsaturated);
(f) Relative permeability;
(g) Bulk density;
(h) Porosity;
(i) Soil sorptive capacity;
(j) Cation exchange capacity (CEC);
(k) Soil organic content;
(l) Soil pH;
(m) Particle size distribution;
(n) Depth of water table;
(o) Moisture content;
(p) Effect of stratification on unsaturated flow;
(q) Infiltration;
(r) Evapotranspiration;
(s) Storage capacity;
(t) Vertical flow rate; and
(u) Mineral content.

(3) Surface Water and Sediment

The Permittee shall conduct a program to characterize the surface water bodies in the vicinity of the facility that may be affected by releases from the facility. Such characterization shall include, but not be limited to, the following activities and information, as appropriate:

(a) Description of the temporal and permanent surface water bodies including:

(i) For lakes and estuaries: location, elevation, surface area, inflow, outflow, depth, temperature or chemical stratification and volume;

(ii) For streams, ditches, drains, swamps and channels: location, elevation, flow, velocity, depth, width, seasonal fluctuations, and flooding

tendencies;

(iii) Drainage patterns; and

(iv) Evapotranspiration.

(b) Description of the chemistry of the natural surface water and sediments; this includes determining the pH, total dissolved solids, total suspended solids, biological oxygen demand, alkalinity, conductivity, dissolved oxygen profiles, nutrients, chemical oxygen demand, total organic carbon, specific contaminant concentrations, etc; and

(c) Description of sediment characteristics including the disposition area, thickness profile, physical and chemical parameters (e.g., grain size, density, organic carbon content, ion exchange capacity, pH, etc.), and specific contaminant concentrations.

(4) Air

The Permittee shall provide information characterizing the climate in the vicinity of the facility. Such information shall include, but not be limited to, as appropriate:

(a) A description of the following parameters;

(i) Annual and monthly rainfall averages;

(ii) Monthly temperature averages and extremes;

(iii) Wind speed and direction;

(iv) Relative humidity and dew point;

(v) Atmospheric pressure;

(vi) Evaporation data;

(vii) Development of inversions; and

(viii) Climate extremes that have been known to occur in the vicinity of the facility, and the frequency of occurrence.

(b) A description of topographic and manmade features which affect air flow and emission patterns, including:

(i) Ridges, hills or mountain areas;

(ii) Canyons or valleys;

(iii) Surface water bodies;

(iv) Wind breaks and forests; and

(v) Buildings.

b. Source/Waste Characterization

The Permittee shall collect analytical data to characterize the source(s) where wastes have been placed, and to describe the characteristics of the wastes. This shall include qualification of the following specific characteristics at each source area, as each source becomes identified during the facility investigation:

(1) Unit/Disposal Area Characteristics:

(a) Location of unit/disposal area;

(b) Type of unit/disposal area;

(c) Design features;

(d) Operating practices (past and present);

(e) Period of operation;

(f) Age of unit/disposal area;

(g) General physical conditions; and

(h) Method used to close the unit.

(2) Waste Characteristics

(a) Type of waste placed in the units;

(i) Hazardous classification;

(ii) Quantity; and

(iii) Chemical composition.

(b) Physical and chemical characteristics;

(i) Physical form (solid, liquid, gas);

(ii) Physical description;

(iii) Temperature;

(iv) pH;

(v) General chemical class (e.g., acid, solvent);

(vi) Molecular weight;

(vii) Density;

(viii) Boiling point;

(ix) Viscosity;

(x) Solubility in water;

(xi) Cohesiveness of the waste;

(xii) Vapor pressure; and

(xiii) Flash point.

(c) Migration and dispersal characteristics of the waste.

(i) Sorption;

(ii) Biodegradability, bioconcentration;

(iii) Photodegradation rates;

(iv) Hydrolysis rates; and

(v) Chemical transformations.

The Permittee shall document the procedures

used in making the above determinations.

c. Contamination Characterization

The Permittee shall collect analytical data on groundwater, soils, surface water, sediment, subsurface gas and air contamination in the vicinity of the facility. These data shall be sufficient to define the extent, origin, direction, and rate of movement of plumes of contamination. Data shall include time and location of sampling, media samples, concentrations found, conditions during samples, and the identity of the individuals performing the sampling and analysis. In developing strategies for collecting these data under Part I.B.4. a and b above, the Permittee shall address the following types of contamination at the facility, as appropriate:

(1) Groundwater Contamination

The Permittee shall conduct a Groundwater Investigation to characterize any plumes of contamination at or originating from the facility. This investigation shall at a minimum provide the following information:

(a) A description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the facility;

(b) The horizontal and vertical direction of contaminant movement;

(c) The velocity of contaminant movement;

(d) The horizontal and vertical concentration profiles of Appendix IX constituents in the plume(s);

(e) An evaluation of factors influencing the plume movement; and

(f) An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations.

(2) Soil Contamination

The Permittee shall conduct an investigation to characterize the contamination of the soil and rock units above the water table in the vicinity of the contaminant release. The investigation shall include the following information:

(a) A description of the vertical and horizontal extent of contamination;

(b) A description of contaminant and soil chemical properties within the source area and contaminant plume. This includes physical and chemical properties that might affect contaminant migration and transformation;

(c) Specific contaminant concentrations;

(d) The velocity and direction of contaminant movement; and

(e) An extrapolation of future contaminant movement.

The Permittee shall document the procedures used in making the above determinations.

(3) Surface Water and Sediment Contamination

The Permittee shall conduct a surface water investigation to characterize contamination in surface water bodies resulting from contaminant releases at the facility. The investigation shall include, but not be limited to, the following:

(a) A description of the horizontal and vertical extent of any immiscible or dissolved plume(s) originating from the facility and the extent of contamination in underlying sediments;

(b) The horizontal and vertical direction of contaminant movement;

(c) The contaminant velocity;

(d) An evaluation of the physical, chemical,

and biological factors influencing contaminant movement;

(e) An extrapolation of future contaminant movement taking into account times of flood; and

(f) A description of the chemistry of the contaminated surface waters and sediments. This includes determining the pH, total dissolved solids, specific contaminant concentrations, etc.

The Permittee shall document the procedures used to make the above determinations.

(4) Air Contamination

The Permittee shall conduct an investigation to characterize the particulate and gaseous contaminants released into the atmosphere. This investigation shall provide the following information:

(a) A description of the horizontal and vertical direction and velocity of contaminant movement;

(b) The rate and amount of release; and

(c) The chemical and physical composition of the contaminants released, including horizontal and vertical concentration profiles.

(5) Subsurface Gas Contamination

The Permittee shall conduct an investigation to characterize subsurface gasses emitted from buried hazardous waste and hazardous constituents in the groundwater. This investigation shall include the following information:

(a) A description of the horizontal and vertical extent of subsurface gases mitigation;

(b) The chemical composition of the gases being emitted;

(c) The rate, amount, and density of the gases being emitted; and

(d) Horizontal and vertical concentration profiles of the subsurface gases emitted.

The Permittee shall document the procedures used in making the above determinations.

d. Potential Receptors

The Permittee shall collect data describing the human populations and environmental systems that are susceptible to contaminant exposure from the facility. Chemical analyses of biological samples may be needed. Data on observable effects in ecosystems or from bioassays may also be needed. The following characteristics shall be identified, as appropriate:

(1) Local uses and possible future uses of groundwater:

(a) Type of use (e.g., municipal or residential drinking water source, industrial, etc.); and

(b) Location of groundwater users including wells and discharge areas.

(2) Local uses and possible future uses of surface waters draining the facility:

(a) Domestic and municipal;

(b) Recreational;

(c) Agricultural;

(d) Industrial; and

(e) Environmental.

(3) Human use of, or access to, the facility and adjacent lands, including, but not limited to:

(a) Recreation;

(b) Agriculture;

(c) Residential;

(d) Commercial;

(e) Zoning; and

(f) Relationship between population locations and prevailing wind direction.

(4) A description of the biota in surface water bodies including benthic macroinvertebrates and fish communities on, adjacent to, or affected by the facility. The aquatic biota expected in these water bodies in the absence of site-related contamination, based on physical habitat characteristics, should also be described.

(5) A description of terrestrial habitats on or potentially affected by the site and a description of potential terrestrial animal receptors seen or expected in those habitats, including, birds, mammals, amphibians, and reptiles.

(6) A demographic profile of the people who use or have access to the facility and adjacent land, including, but not be limited to: age; sex; and sensitive subgroups.

(7) A description of any endangered or threatened species near the facility.

5. Quality Assurance Project Plan

The Permittee shall prepare a plan to document all monitoring procedures; sampling, field measurements and sample analysis performed during the investigation to characterize the environmental setting, source, and contamination, so as to ensure that all information, data and resulting decisions are technically sound, statistically valid, and properly documented.

a. For convenience in review, it is a requirement that Quality Assurance Project Plans (QAPjP) are to be prepared using the document control format consisting of the following information, placed in the upper right-hand corner of each document page:

- Project Name;
- Section Number;
- Revision Number;
- Date; and
- Section Page Number.

The Permittee can see the upper right-hand corner on each page of the guidance documents, QAMS-005/80 and "Content Requirements for the Preparation of RCRA QAPjPs," for an example of this format. This format provides for easy change of individual QAPjP element pages without rewriting the entire document.

A QAPjP meeting must be held prior to the preparation of the QAPjP and its supporting documents. During the meeting, U.S. EPA representatives will provide QAPjP preparation guidance and lead a discussion on the specific sampling and analysis issues for the project.

Four copies of the QAPjP must be submitted initially and for each required revision.

b. The QAPjP must include, but not be limited to, a discussion addressing each of the following items.

(1) TITLE PAGE AND QAPjP APPROVAL

The title page of the QAPjP should contain, at a minimum, provisions for approval by the following parties:

(a) The U.S. EPA Region 5 Permit Writer;

(b) The U.S. EPA Regional Quality Assurance Manager, Monitoring and Quality Assurance Branch (MQAB);

(c) The responsible Project Officer (PO) and Quality Assurance (QA) Officer for the contract engineering firm; and

(d) Subcontractors, as appropriate (i.e., laboratories, sampling, subcontractors, drillers, etc.).

After final approval of the QAPjP by the U.S. EPA Regional Quality Assurance Manager, the Project Coordinator will determine the distribution, and the responsibility for this distribution, of QAPjP copies to each person/organization having a major responsibility for the proposed environmental measurements. This includes, but is not limited to, contractors, subcontractors, and each laboratory.

(2) TABLE OF CONTENTS

The Table of Contents shall address each of the following items:

(a) Introduction;

(b) A serial listing of each of the 16 QAPjP elements shall be provided. Each section, subsection and page shall be clearly labelled and numbered properly;

(c) A listing of any appendices which are required to augment the QAPjP as presented (i.e., SOPs, summaries of past data, etc.) shall be provided;

(d) Following the list of appendices, a listing of any tables and figures which are required to augment the QAPjP shall be provided; and

(e) At the end of the Table of Contents, a listing of the Quality Assurance Section (QAS) officials and other individuals receiving official copies of the QAPjP and any subsequent revisions shall be provided.

(3) PROJECT DESCRIPTION

The purpose of the project description is to:

- Define the objectives (goal of the investigation);
- Describe how the project will be designed to obtain the information needed for these objectives; and

- Define the scope of the QAPjP for reviewers.

The project description element should include the following:

(a) Introduction

A succinct description of the project including a brief statement addressing the phase(s) of the work and general objectives of the investigation;

(b) Site Description

A description of site-specific features including location, size, borders, important physical features, topographic, geological and hydrogeologic information, etc., separate paragraphs/sections shall be used to clearly address each of these items;

(c) Site History or Background

Chronological history of the site which led to its RCRA status; documentation of known chemicals dumped on site; summary of any previous sampling and analysis efforts; data with overview of these results or copy of previous data reports for the site can be appended to the QAPjP; a summary table of past data along with the analytical methodologies used and their method detection limits (if available) should be provided;

(d) Target Compounds

Discussion of important site contaminants or target compounds, including required detection limits (RDLs) for RFI/CMS;

(e) Project Objectives

The project objectives element should include the following:

(i) Specific objectives;

(ii) The intended data usages;

(iii) The brief statement outlining the usages of all data including any data generated from field screening and or/field measurements. These may include, but not be limited to the following:

- Qualitative or semi-quantitative analyses for selection of sample and/or sampling locations;
- Future enforcement actions;
- Data for remedial action alternatives;
- Determination of hazardous waste characteristics for remedial removals;
- Protection of public health; and
- Definition of extent of environmental contamination.

(iv) Data Quality Objective (DQO) summaries from RCRA DQO preparation guidance.

(f) Sample Network and Rationale

A succinct description of the monitoring (sampling) network design and rationale. This may be referenced to readily available work and sampling plans. The following are minimum requirements:

(i) Diagrams or site maps of sampling locations;

(ii) Short rationale of selected sampling locations; and

(iii) Summary table listing matrices, parameters, and their frequency of collection.

NOTE: Parameters shall include both laboratory and field parameters. The parameters may include the following field activities if they are applicable:

- Any field screening (i.e., screening of volatile organics using HNu, OVA, etc.);
- Any field measurements (i.e., pH, conductance, temperature, etc.); and
- Hydrogeologic investigations (i.e., soil permeability, particle size, etc.).

Sample matrices and parameters are best listed in groups for a remedial activity site as follows:

- On-site contaminated soils, sludges, barrels, liquids, or sediments. These types of sampling and analyses are often done to determine disposal methods;
- Ambient monitoring of air, groundwater, surface water, soils, drinking water, river sediments, fish;

  Specifications of filtered or unfiltered sample aliquot for groundwater and surface water must be included as part of the definition of parameters. These types of analyses usually are intended to measure the extent of environmental contamination and to assess public health risk; and
- Regulatory requirements: Appendix IX analyses may be required for certain projects.

(g) Project Schedule

A description of dates anticipated for

start, milestones, and completion of the project and monitoring activities. A milestone table or a bar chart consisting of project tasks and time lines is appropriate.

(4) PROJECT ORGANIZATION AND RESPONSIBILITY

This element identifies key personnel organizations that are necessary for the remedial activity and apprises them of their responsibilities.

(a) Management Responsibilities

Operational responsibilities showing how execution and direct management of the technical and administrative aspects of this project have been assigned as shown in the following Table.

Quality Assurance Organization

Tasks	Responsible Organization/Personnel
Final review/approval of QAPjP	U.S. EPA Region 5 PO and U.S. EPA Region 5 QA Officer
QA review and approval of reports, SOPs, and field activities; audits of reports, procedures, and activities for identifying, controlling nonconformance for corrective actions	Permittee's Contractor QA Manager
Evidence audits of field records	Permittee's Contractor
Data assessment	Permittee's Contractor
Performance and system audits of laboratories	U.S. EPA Region 5 Central Regional Laboratory (CRL)
Analysis	Contract Laboratory
Performance and system audits	U.S. EPA Region 5

of field activities	CRL and/or Central District Office (CDO)
Approval of QA Program and laboratory test procedures	U.S. EPA Region 5 QA Section, U.S. EPA Region 5 CRL

Include a table, chart or figure showing the project organization and line authority for the Quality Assurance Organization described above.

(5) QUALITY ASSURANCE OBJECTIVES FOR MEASUREMENT DATA IN TERMS OF PRECISION, ACCURACY, COMPLETENESS, REPRESENTATIVENESS AND COMPARABILITY

Clearly describe the quality assurance (QA) objectives of the project in terms of precision, accuracy, completeness, representativeness and comparability for both field activities (sampling, measurements and screening) and laboratory analyses, including the project required acceptance limits and means to achieve these QA objectives.

NOTE: Trip blanks are required at a frequency of one per cooler in which aqueous matrix VOC samples are shipped. Field blanks are required for all aqueous matrix parameters at a frequency of one for every ten or fewer investigative samples. Field duplicates are required at the same frequency as field blanks, while accounting for all parameters and matrices. These field QC samples must be treated as regular investigative samples concerning sample volume, containers and preservation. Field duplicates must not be composited prior to placing them in the sample containers.

(6) SAMPLING PROCEDURES

If a separate sampling plan (SP) will be

written, then the sampling procedures shall be referenced to the SP. Otherwise, the detailed sampling procedures shall be described under this QAPjP element. The description of sampling procedures shall include the following:

(a) Detailed procedures, criteria, or guidelines used for sampling point selection;

(b) Detailed procedures, criteria, or guidelines used for collecting background samples, if any; detailed procedures for preparing composite samples shall also be properly described if composite samples are to be collected;

(c) Detailed procedures for sample collection of each sample matrix or parameters;

(d) Detailed procedures for sample collection of each sample matrix or parameters;

(e) Samples containers, reagents, preservatives, and holding time requirements - a table is appropriate;

(f) Special conditions for the preparation of sampling containers, and time requirements - a table is appropriate;

(g) Chain-of-custody procedures - including an acceptable sample numbering system;

(h) Detailed procedures for preparing/collecting trip blank samples, field blank samples and field duplicate samples;

(i) Documentation of sampling activities - including forms, notebooks, bound logbook and procedures to record sample history, sampling conditions, etc., and analyses to be taken;

(j) Summary of sampling and analysis - using

a table is appropriate;

(k) For ground and surface waters, filtered samples must be submitted for analysis of dissolved metals, and as appropriate, unfiltered samples must be submitted for analysis of total metals; and

(l) Compositing of any samples is prohibited.

(7) SAMPLE CUSTODY

Sample custody consists of three major elements, namely the chain-of-custody procedure for field sampling and measurements; chain-of-custody procedure for laboratory analysis; and the final evidence file. All of these three elements shall be addressed clearly, and separately:

(a) Chain-of-custody procedure for field activities, including sampling, field measurement and screening.

(b) Chain-of-custody procedure for laboratory activities,including sample receiving, login, storage, and tracking of custody-transfer during sample preparation and analysis, etc.

(c) The final evidence file, including the description of file contents and specifying file custodian.

(8) CALIBRATION PROCEDURES AND FREQUENCY

Describe the calibration procedures and their frequency for both field and laboratory instruments. The description shall include the following:

(a) Field Instruments

(i) Initial calibration, including multilevel calibration for determination of usable range;

(ii) Continuing calibration check and acceptable control limits; and

(iii) Conditions to trigger recalibration.

(b) Laboratory Instruments

(i) Initial calibration for each instrument;

(ii) Initial calibration verification;

(iii) Continuing calibration check; and

(iv) Conditions to trigger the recalibration.

(9) ANALYTICAL PROCEDURES

SW-846 (third edition) methods are preferred. Other U.S. EPA methods from the Clean Water Act (CWA), Superfund Contract Laboratory Program (CLP) Clean Air Act Program, or Safe Drinking Water Act (SDWA) are acceptable when appropriate for the constituent of interest. The following shall be properly addressed:

(a) For SW-846 (third edition) analytical method, the method for analysis (by number). For parameters to be analyzed by methods other than those found in SW-846, the following shall be provided:

(i) For nonstandard methods, an appropriate Standard Operating Procedure (SOP) shall be included as an integrated part of the QAPjP; and

(ii) For modified SW-846 or other standard methods (i.e., Appendix IX or site-specific contaminants), the analytical procedure to be used shall be documented in the format of an SOP.

(b) For U.S. EPA or other standard methods not found in SW-846, a reference to the method manual and procedure number(s) is

appropriate.

(c) Chain-of-custody procedure to be used/followed by analyst of the laboratory performing the analytical services shall be clearly addressed or properly referenced, provided the procedure is described elsewhere in the QAPjP.

(10) INTERNAL QUALITY CONTROL CHECKS

All specific quality control check methods to be followed for both laboratory and field activities should be described or properly referenced. Items to be considered include the following:

(a) Field Activities (Measurements and Screening)

(i) Continuing calibration check;

(ii) Replicate analyses;

(iii) Spike sample analyses;

(iv) Blank (trip blank, field blank, etc.);

(v) Quality Control (QC) samples;

(vi) Zero and Span gases (i.e., air monitoring); and

(vii) Calibration standards and devices, etc.

(b) Laboratory Analyses

(i) Method blanks;

(ii) Reagent/preparation blanks;

(iii) Matrix spike and matrix spike duplicates;

(iv) Calibration standards;

(v) Internal standards;

(vi) Surrogate standards;

(vii) Continuing calibration check;

(viii) Calibration check standards, etc.; and

(ix) Laboratory duplicate/replicate analysis, etc.

(11) DATA REDUCTION, VALIDATION AND REPORTING

(a) Methods to be used for reducing both field and laboratory data. For instance, reducing data from instrument printout to final reporting units using a calibration curve, and an average response factor or updated response factor, etc., shall be described.

(b) Criteria/guidelines/procedures to be used for data validation shall be described. This function must be performed independently of the laboratory.

(c) The data reporting format including all forms and reporting units shall be described. The description shall include the listing of data package contents (deliverables from the laboratory).

(12) PERFORMANCE AND SYSTEM AUDITS

This QAPjP element describes the procedures and mechanisms used to ensure that the sampling and analysis are performed per specifications of the QAPjP and that measurement data meet project requirements. A description of both the internal and external audits for the field activity as well as laboratory analysis shall be provided to address this QAPjP element.

(a) Internal Audits which can be implemented by contractor's site manager and/or QA officer. The description provided for this QAPjP element shall address the following:

- The responsible party for these audits shall be identified;
- The frequency of these audits to be conducted shall be specified; and
- Methods/procedures to be used for conducting these audits shall be described.

(b) External Audits

The external audits of laboratories selected for a specific monitoring activity are EPA's responsibility.

- Laboratory Scientific Support Section (LSSS), Central Regional Laboratory (CRL), Region 5 is responsible for these audits.

(13) PREVENTIVE MAINTENANCE

Preventive maintenance procedures to be used for both field and laboratory instruments shall be described. A table showing the type of maintenance to be performed and the frequency is appropriate.

For the maintenance of laboratory instruments used for the analysis of SW-846 methods, the analytical methods can be referenced.

(14) SPECIFIC ROUTINE PROCEDURES USED TO ASSESS DATA PRECISION, ACCURACY, AND COMPLETENESS

The procedures/equations to be used to aid in assessing the accuracy and precision of analytical data, and completeness of data collection shall be clearly documented or properly referenced.

(15) CORRECTIVE ACTION

In order to address this QAPjP element the following shall be provided:

(a) The mechanism of triggering the initiation of limitation of corrective

actions;

(b) The proper procedures to be used for initiating, development, approval and implementation of the corrective actions. Parties for initiating, approval and implementation of the corrective actions shall be identified; and

(c) Alternate corrective actions to be taken.

(16) QUALITY ASSURANCE REPORTS TO MANAGEMENT

Quality assurance reports shall be submitted on a periodic basis to management. This shall be done to ensure that problems, if any, identified during the sampling and/or analysis are investigated, and corrective actions are properly taken. For a very simple project, a final report may be substituted for QA reports.

6. RFI Report

The Permittee's RFI Workplan shall include an outline of the contents of the RFI report. The RFI report shall include the following:

a. A summary of all facility investigations conducted during the RFI;

b. An analysis of all data developed during the RFI;

c. A description of the nature and extent of contamination at the facility, including:

(1) the release source(s);
(2) the release mechanism(s);
(3) specific contaminant concentrations and the distribution of contamination;
(4) pathways of contamination migration; and
(5) actual or potential receptors including exposure routes.

d. Identification of all relevant and applicable standards, including background values, for the protection of human health and the environment, and comparison of those standards to the extent

of contamination found at the facility; and

e. Recommendation of which SWMUs require a Corrective Measure Study, and the identification of those corrective action alternatives that will be further investigated.

7. Health and Safety Plan

The Permittee's RFI Workplan shall include a Health and Safety Plan covering activities to be conducted during the RFI. This Plan shall be consistent with all applicable U.S. EPA, OSHA, NIOSH, State and local requirements and regulations, and the conditions of this Permit.

8. Community Relations Plan

The Permittee's RFI Workplan shall include a plan for dissemination of information to the public regarding investigation activities and results.

C. RFI Implementation

The Permittee shall conduct the RCRA Facility Investigation according to terms and schedules in the RFI Workplan, as approved by the Regional Administrator. The RFI Workplan shall include the information required in Part I.B. of this Scope of Work.

D. RFI Reporting Requirements

The Permittee shall prepare and submit RFI progress reports and a draft and final RFI report.

1. Facility Background Report

The Permittee shall submit a facility background report according to the requirements of Part I.B.1. of this Scope of Work and the Permit Schedule of Compliance.

2. Potential Corrective Measures Technologies

The Permittee shall submit a report on corrective measures technologies according to the requirements of Part I.B.2. of this Scope of Work and the Permit Schedule of Compliance.

3. Progress Reports

The Permittee shall submit progress reports according to the requirements of Part I.B.3.d. of this Scope of Work and the permit Schedule of Compliance.

4. Draft Report

The Permittee shall submit a final RFI report according to the requirements of Part I.B.6. of this Scope of Work and permit Schedule of Compliance.

5. Final Report

The Permittee shall submit a final RFI report according to the requirements of Part I.B.6. of this Scope of Work and permit Schedule of Compliance.

II. Corrective Measures Study (CMS)

The purpose of a CMS is to develop and evaluate remedial alternative(s) and recommend the remedy(ies) to be taken.

A. CMS Workplan

If required under Permit Attachment E.G.4., the Permittee shall prepare a CMS Workplan. The Permittee may elect either to screen a number of potential remedies prior to evaluating a smaller number of potential remedies or, based on justification and prior approval by the U.S. EPA, delete the screening step and proceed with evaluation of the expected remedy(ies), including any specified by U.S. EPA.

The CMS Workplan includes the following:

1. Findings of the RCRA Facility Investigation

The Permittee's CMS Workplan shall summarize the findings of the RFI, highlighting the description of the nature and extent of contamination, and the identification of SWMUs requiring corrective measures. Any updates to facility conditions since the RFI was conducted, including implementation of interim measures, shall be included in this section of the workplan.

2. Target Cleanup Levels and Media Cleanup Standards

The Permittee's CMS Workplan shall propose site-

specific target cleanup levels for the corrective measures. These target cleanup levels shall be based on information gathered during the RFI, from U.S. EPA guidance, the requirements of any applicable Federal standards for protection of human health and the environment.

The Permittee shall recommend final media cleanup standards when the final remedy is selected. If the media cleanup standards differ from the target cleanup levels, the Permittee shall document the reasons for recommendation of different standards.

3. Screening of Corrective Measures Technologies

The Permittee shall screen corrective measures technologies to eliminate those that may prove infeasible to implement, or that rely on technologies unlikely to or that do not achieve the media cleanup standards within a reasonable period of time. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations.

The Permittee's CMS Workplan shall document the reasons for eliminating any technology, based on the following criteria:

a. Site Characteristics;

Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration;

b. Waste Characteristics; and

Technologies clearly limited by waste characteristics should be eliminated from consideration;

c. Technology Limitations

During the screening process, the level of technological development, performance record, and inherent construction, operation, and maintenance problems should be identified for

each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process.

4. Identification of the Corrective Measures Alternative(s)

The Permittee's CMS Workplan shall identify the corrective measures alternative(s) based on the target cleanup levels and an analysis of available technologies. The Permittee shall rely on sound engineering practice to determine which of the previously identified technologies appear most suitable for the site. Technologies can be combined to form the overall corrective action alternative(s). The alternatives developed should represent a workable number of options that appear to adequately address all site problems and corrective action objectives. The Permittee shall document the reasons for excluding technologies that might be feasible alternatives.

5. Evaluation and Recommendation of the Corrective Measures Alternative(s)

The Permittee's CMS Workplan shall describe how each corrective measure alternative that passes through the initial screening process shall be evaluated. The evaluation shall be based on technical, environmental, human health and institutional concerns. The Permittee shall also develop cost estimates for each corrective measure.

a. Evaluation Criteria

The evaluation criteria shall include the following:

(1) Technical:

The Permittee shall evaluate each alternative based on performance, reliability, implementability and safety.

(a) The Permittee shall evaluate performance based on the effectiveness and useful life of the measure:

(i) Effectiveness shall be evaluated in terms of the

ability to perform intended functions, such as containment, division, removal, destruction, or treatment. The effectiveness of each measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could impede effectiveness shall be considered; and

(ii) Useful life is defined as the length of time the level of effectiveness can be maintained. Most corrective measure technologies deteriorate with time. Each measure shall be evaluated in terms of the projected service lives of its components.

(b) The Permittee shall provide information on the reliability of each corrective measure including its operation and maintenance requirement and its demonstrated reliability:

(i) Operation and maintenance requirements include the frequency and complexity of the operation and maintenance. Technologies requiring frequent or complex operation and maintenance should be regarded as less reliable. The availability of labor and materials to meet these requirements shall also be considered; and

(ii) Demonstrated reliability is a way of measuring the risk and effect of failure. The Permittee should evaluate the technology's reliability under analogous conditions, the flexibility to deal with uncontrollable changes at the site, and the impact on

receptors of a failure.

(c) The Permittee shall describe the implementability of each alternative, including the ease of installation and the time required to achieve a given level of response:

(i) Constructability is determined by both internal and external facility conditions (e.g., location, depth to water table, availability of utilities need for special permits, etc.). The Permittee shall evaluate what measures will facilitate construction under these conditions; and

(ii) Time has two components that shall be addressed: the time it takes to implement a corrective measure, and the time it takes to see beneficial results.

(d) The Permittee shall evaluate each corrective measure alternative with regard to safety. This evaluation shall include threats to the safety of nearby communities and environments, as well as to workers during the implementation. Factors to consider are fire, explosion and exposure to hazardous substances.

(2) Environmental

The Permittee shall assess each alternative to determine its short- and long-term beneficial and adverse effects on the environment. Each alternative will be evaluated for its impact on habitat types and plant and animal receptors located in, adjacent to, or affected by the facility. Receptor impacts should include those occurring at the individual level (e.g., mortality, growth and reproductive impairments) and those occurring at higher levels of biological organization (i.e., at population, community, and ecosystem levels). The assessment should include

proposed measures for mitigating adverse impacts.

(3) Human Health

The Permittee shall assess each alternative in terms of the extent to which it mitigates short- and long-term potential or actual exposure to any residual contamination and protects human health both during and after implementation of the corrective measure. Each alternative will be evaluated to determine the level of contaminants through various media, and the reduction over time. The residual levels from each alternative must be compared with target cleanup levels, including existing criteria, standards and guidelines acceptable to the U.S. EPA.

(4) Institutional

The Permittee shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, State and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operations, and timing of each alternative.

b. Cost Estimate

The Permittee shall develop an estimate of the cost of each corrective measure alternative, and for all phases of the action. The cost estimate shall include both capital and operation and maintenance costs, as appropriate.

(1) Capital costs consist of direct (construction) and indirect (nonconstruction and overhead) costs.

(a) Direct capital costs include:

(i) Construction costs: Materials, labor and equipment required to install the corrective measure;

(ii) Equipment costs: Treatment, containment, disposal and/or service equipment necessary to

implement the action;

(iii) Land site development costs: Expenses associated with the purchase of land and development of existing property; and

(iv) Buildings and service costs: Process and non- process buildings, utility connections, purchased services, and disposal costs.

(b) Indirect capital costs include:

(i) Engineering expenses: Costs of administration, design, construction supervision, drafting, and testing of corrective measure alternatives;

(ii) Legal fees and license or permit costs;

(iii) Startup and shakedown costs; and

(iv) Contingency allowances: Funds to cover costs resulting from unforseen circumstances, such as adverse weather conditions, strikes, and inadequate facility characterization.

(2) Operation and maintenance costs are post-construction costs necessary to ensure continued effectiveness of a corrective measure. The Permittee shall consider the following operation and maintenance cost components:

(a) Operating labor costs: Wages, salaries, training, overhead, and fringe benefits associated with the labor necessary for continued operation;

(b) Maintenance materials and labor costs: Costs for labor, parts, and other resources required for routine

maintenance of facilities and equipment;

(c) Auxiliary materials and energy: Costs of items such as chemicals, electricity, water and sewer service, and fuel;

(d) Purchased services: Sampling costs, laboratory fees, and professional fees;

(e) Disposal and treatment costs: Costs of transporting, treating and disposing of waste materials and residues;

(f) Administrative costs;

(g) Insurance, taxes and licensing costs; and

(h) Other costs: Items that do not fit into any of the above categories.

c. Recommendation of the Corrective Measure Alternative(s)

The Permittee shall present a corrective measure alternative using technical, human health, and environmental criteria. This recommendation shall include summary tables which allow the alternative or alternative to be understood easily. Tradeoffs among health risks, environmental effects, and other pertinent factors shall be highlighted. The U.S. EPA will select the corrective measure alternative or alternatives to be implemented based on the results of the Corrective Measure Study. At a minimum, the following criteria will be used to justify the final corrective measure or measures.

(1) Technical

(a) Performance - corrective measure or measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference;

(b) Reliability - corrective measure or measures which do not require frequent or complex operation and maintenance

activities and that have proven effective under waste and facility conditions similar to those anticipated will be given preference;

(c) Implementability - corrective measure or measures which can be constructed and operating to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred; and

(d) Safety - corrective measure or measures which pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

(2) Human Health

The corrective measure or measures must comply with existing U.S. EPA criteria, standards, or guidelines for the protection of human health. Corrective measures which provide the minimum level of exposure to contaminants and the maximum reduction in exposure with time are preferred.

(3) Environmental

The corrective measure or measures posing the least adverse impact (or greatest improvement) over the shortest period of time on the environment will be favored.

6. Reporting Requirements

a. The Permittee's CMS Workplan shall include provisions for the submittal of periodic progress reports. These progress reports shall contain:

(1) A description and estimate of the percentage of the CMS completed;

(2) Summaries of all findings;

(3) Summaries of all contacts with representatives of the local community, public interest groups, or State government during the reporting period;

(4) Summaries of all problems or potential problems encountered during the reporting period;

(5) Actions being taken to rectify problems;

(6) Changes in personnel during the reporting period; and

(7) Projected work for the next reporting period.

b. The Permittee's CMS Workplan shall include an outline of the contents of the CMS report. The CMS report shall include the following:

(1) An updated description of the findings of the RFI, highlighting the nature and extent of the contamination as documented by the RCRA Facility Investigation Report;

(2) Recommended target cleanup levels for corrective action for each SWMU, or group of SWMUs;

(3) A summary of the results of the screening of Corrective Measures Technologies;

(4) A description of the evaluation of corrective measure alternatives using the criteria in Section II.A.5. of this Scope of Work; this section shall include summary tables which allow the alternative(s) to be understood easily. Comparisons among health risks, environmental effects, and other pertinent factors among the alternatives evaluated shall be highlighted; information on all evaluated potential remedy(ies) shall be presented.

(5) A description and justification of the recommended remedy, including recommended media cleanup standards that can be achieved by the remedy;

(6) A description of design and implementation considerations for the recommended remedy(ies) including:

(a) Special technical problems;

(b) Additional engineering data required;

(c) Permits and regulatory requirements;

(d) Access, easements, rights-of-way;

(e) Health and safety requirements;

(f) Community relations activities; and

(g) Long-term monitoring requirements to assess attainment of media cleanup standards (including ecological integrity).

(7) A description of the cost estimates and schedules for implementing the recommended remedy(ies) including:

(a) Capital cost estimates;

(b) Operation and maintenance cost estimates; and

(c) Project schedule for implementation.

7. Schedule for Completion of the CMS

The Permittee's CMS Workplan shall include a schedule for completion of all tasks described in Part II.A. of this Scope of Work.

B. CMS Implementation

The Permittee shall conduct the Corrective Measures Study according to the terms and schedules in the CMS Workplan, as approved by the Regional Administrator. The CMS Workplan shall include the information required in Part II.A. of this Scope of Work.

C. CMS Reporting Requirements

The Permittee shall prepare and submit CMS progress reports and a draft and final CMS report.

1. Progress Reports

The Permittee shall submit progress reports according to the requirements of Part II.A.6.a. of this Scope of Work and the Permit Schedule of Compliance.

2. Draft Report

The Permittee shall submit a draft CMS report according to the requirements of Part II.A.6.b. of this Scope of Work and the Permit Schedule of Compliance.

3. Final Report

The Permittee shall submit a final CMS report according to requirements of Part II.A.6.B. of this Scope of Work and the Schedule of Compliance found in Attachment H of this permit.

ATTACHMENT G
CORRECTIVE MEASURES STUDY SCOPE OF WORK

SCOPE OF WORK FOR CORRECTIVE MEASURE STUDY AT DETROIT COKE CORPORATION

PURPOSE

The purpose of this Corrective Measure Study (CMS) is to develop and evaluate the corrective action alternative(s) and to recommend the corrective measure(s) to be taken by the Detroit Coke Corporation at Detroit, Michigan. The Permittee shall furnish personnel, materials, and services necessary to prepare the corrective measure study, except as otherwise specified.

SCOPE

The Corrective Measure Study consists of four tasks:

TASK VII: IDENTIFICATION AND DEVELOPMENT OF THE CORRECTIVE ACTION ALTERNATIVE OR ALTERNATIVES

Based on the results of the RCRA Facility Investigation (RFI), the Permittee shall identify, screen and develop the alternative or alternatives for removal, containment, treatment and/or other remediation of the contamination based on the objectives established for the corrective action.

A. DESCRIPTION OF CURRENT SITUATION

The Permittee shall submit an update to the information describing the current situation at the facility and the known nature and extent of the contamination as documented by the RFI Report. The Permittee shall provide an update to information presented in Task I of the RFI to the U.S. EPA regarding previous response activities and any interim measures which have or are being implemented at the facility. The Permittee shall also make a facility-specific statement of the purpose for the response, based on the results of the RFI. The statement of purpose should identify the actual or potential exposure pathways that should be addressed by corrective measures.

B. ESTABLISHMENT OF CORRECTIVE ACTION OBJECTIVES

The Permittee, in conjunction with the U.S. EPA, shall establish site- specific objectives for the corrective action. These objectives shall be based on human health and environmental criteria, information gathered during the RFI, U.S. EPA guidance, and the requirements of any applicable Federal statutes. At a minimum, all corrective actions concerning groundwater releases from regulated units must be consistent with, and as stringent as, those required under 40 CFR 264.100.

C. SCREENING OF CORRECTIVE MEASURE TECHNOLOGIES

The Permittee shall review the results of the RFI, reassess the technologies specified in Task II, and identify additional technologies which are applicable at the facility. The Permittee shall screen corrective measure technologies identified in Task II of the RFI to eliminate those that may prove infeasible to implement, that rely on technologies unlikely to perform satisfactorily or reliably, or that do not achieve the corrective measure objective within a reasonable time period. This screening process focuses on eliminating those technologies which have severe limitations for a given set of waste and site-specific conditions. The screening step may also eliminate technologies based on inherent technology limitations.

Site, waste, and technology characteristics which are used to

screen inapplicable technologies are described in more detail as follows.

1. Site Characteristics

Site data should be reviewed to identify conditions that may limit or promote the use of certain technologies. Technologies whose use is clearly precluded by site characteristics should be eliminated from further consideration.

2. Waste Characteristics

Identification of waste characteristics that limit the effectiveness or feasibility of technologies is an important part of the screening process. Technologies clearly limited by these waste characteristics should be eliminated from consideration. Waste characteristics particularly affect the feasibility of in-situ methods, direct treatment methods, and land disposal (on/off-site).

3. Technology Limitations

During the screening process, the level of technology development, performance record, and inherent construction, operation, and maintenance problems should be identified for each technology considered. Technologies that are unreliable, perform poorly, or are not fully demonstrated may be eliminated in the screening process. For example, certain treatment methods have been developed to a point where they can be implemented in the field without extensive technology transfer or development.

D. IDENTIFICATION OF THE CORRECTIVE MEASURE ALTERNATIVE OR ALTERNATIVES

The Permittee shall develop the corrective measure alternative or alternatives based on the corrective action objectives following the preparation of the RFI Report. The Permittee shall rely on engineering practice(s) to determine which of the previously identified technologies appears most suitable for the site. Technologies can be combined to form the overall corrective action alternative or alternatives. The alternative or alternatives developed should represent a workable number of option(s) that each appear to adequately address all site problems and corrective action objectives. Each alternative may consist of an individual technology or a combination of technologies. The Permittee shall document the reasons for excluding technologies in the development of the alternative or alternatives.

TASK VIII: LABORATORY AND BENCH-SCALE STUDIES

The Permittee shall conduct laboratory and/or bench-scale studies to determine the applicability of corrective measure technologies to facility conditions. The Permittee shall analyze the technologies based on literature review, vendor contacts, and past experience to determine the testing requirements.

The Permittee shall develop a testing plan identifying the types and goals of the studies, the level of effort needed, and the procedures to be used for data management and interpretation.

Upon completion of the testing, the Permittee shall evaluate the testing results to assess the technology or technologies with respect to the site-specific questions identified in the test plan.

The Permittee shall prepare a report summarizing the testing program and its results, both positive and negative.

TASK IX: EVALUATION OF THE CORRECTIVE MEASURE ALTERNATIVE OR ALTERNATIVES

The Permittee shall describe each corrective measure alternative that passes through the Initial Screening in Task VII and evaluate each corrective measure alternative and its components. The evaluation shall be based on technical, environmental, human health and institutional concerns. The Permittee shall also develop cost estimates of each corrective measure.

A. Technical/Environmental/Human Health/Institutional

The Permittee shall provide a description of each corrective measure alternative which includes but is not limited to the following: preliminary process flow sheets; preliminary sizing and type of construction for buildings and structures; and rough quantities of utilities required. The Permittee shall evaluate each alternative in the four following areas.

1. Technical

The Permittee shall evaluate each corrective measure alternative based on performance, reliability, implementability, and safety.

a. The Permittee shall evaluate performance based on the effectiveness and useful life of the corrective measure.

(1) Effectiveness shall be evaluated in terms of the ability to perform intended functions, such as containment, diversion, removal, destruction, or treatment. The effectiveness of each corrective measure shall be determined either through design specifications or by performance evaluation. Any specific waste or site characteristics which could potentially impede effectiveness shall be considered. The evaluation should also consider the effectiveness of combinations of technologies.

(2) Useful life is defined as the length of time the level of effectiveness can be maintained. Most corrective measure technologies, with the exception of destruction, deteriorate with time. Often, deterioration can be slowed through proper system operation and maintenance, but the technology eventually may require replacement. Each corrective measure shall be evaluated in terms of the projected service lives of its component technologies. Resource availability in the future life of the technology, as well as appropriateness of the technologies, must be considered in estimating the useful life of the

project.

b. The Permittee shall provide information on the reliability of each corrective measure including the operation and maintenance requirements and the demonstrated reliability.

(1) Operation and maintenance requirements include the frequency and complexity of necessary operation and maintenance. Technologies requiring frequent or complex operation and maintenance activities should be regarded as less reliable than technologies requiring little or straightforward operation and maintenance. The availability of labor and materials to meet these requirements shall also be considered.

(2) Demonstrated and expected reliability is a way of measuring the risk and effect of failure. The Permittee should evaluate whether the technologies have been used effectively under analogous conditions; whether the combination of technologies has been used together effectively; whether failure of any one technology has an immediate impact on receptors; and whether the corrective measure has the flexibility to deal with uncontrollable changes at the site.

c. The Permittee shall describe the implementability of each corrective measure including the relative ease of installation (constructability) and the time required to achieve a given level of response.

(1) Constructability is determined by conditions both internal and external to the facility conditions and includes such items as location of underground utilities, depth to water table, heterogeneity of subsurface materials, and location of the facility (i.e., remote location vs. a congested urban area). The Permittee shall evaluate what measures can be taken to facilitate construction under these conditions. External factors which affect implementation include the need for special permits or agreements, equipment availability, and the location of suitable off-site treatment or disposal facilities.

(2) Time has two components that shall be addressed: the time it takes to implement a corrective measure; and the time it takes to actually see beneficial results. Beneficial results are defined as the reduction of contaminants to some acceptable, pre-established level.

d. The Permittee shall evaluate each corrective measure alternative with regard to safety. This evaluation shall

include threats to the safety of nearby communities and environments as well as those to workers during implementation. Factors to consider are fire, explosion, and exposure to hazardous substances.

2. Environmental

The Permittee shall perform an Environmental Assessment for each alternative. The Environmental Assessment shall focus on the facility conditions and pathways of contamination actually addressed by each alternative. The Environmental Assessment for each alternative will include, at a minimum, an evaluation of: the short- and long-term beneficial and adverse effects of the response alternative; any adverse effects on environmentally sensitive areas; and an analysis of measures to mitigate adverse effects.

3. Human Health

The Permittee shall assess each alternative in terms of the extent to which it mitigates short- and long-term potential exposure to any residual contamination and how it protects human health, both during and after implementation of the corrective measure. The assessment will describe the levels and characterizations of contaminants on-site, potential exposure routes, and potentially affected population. Each alternative will be evaluated to determine the level of exposure to contaminants and the reduction over time. For management of mitigation measures, the relative reduction of impact will be determined by comparing residual levels of each alternative with existing criteria, standards, or guidelines acceptable to the U.S. EPA.

4. Institutional

The Permittee shall assess relevant institutional needs for each alternative. Specifically, the effects of Federal, State, and local environmental and public health standards, regulations, guidance, advisories, ordinances, or community relations on the design, operation, and timing of each alternative.

B. Cost Estimate

The Permittee shall develop an estimate of the cost of each corrective measure alternative (and for each phase or segment of the alternative). The cost estimate shall include both capital and operation and maintenance costs.

1. Capital costs consist of direct (construction) and indirect (nonconstruction and overhead) costs.

a. Direct capital costs include:

(1) Construction costs: Costs of materials, labor (including fringe benefits and workers' compensation), and equipment required to install the corrective measure;

(2) Equipment costs: Costs of treatment, containment, disposal and/or service equipment necessary to implement the action; these materials remain until the corrective action is complete;

(3) Land and site-development costs: Expenses associated with purchase of land and development of existing property; and

(4) Buildings and services costs: Costs of process and nonprocess buildings, utility connections, purchased services, and disposal costs.

b. Indirect capital costs include:

(1) Engineering expenses: Costs of administration, design, construction supervision, drafting, and testing of corrective measure alternatives;

(2) Legal fees and license or permit costs: Administrative and technical costs necessary to obtain licenses and permits for installation and operation;

(3) Startup and shakedown costs: Costs incurred during corrective measure startup; and

(4) Contingency allowances: Funds to cover costs resulting from unforeseen circumstances, such as adverse weather conditions, strikes, and inadequate facility characterization.

2. Operation and maintenance costs are post-construction costs necessary to ensure continued effectiveness of a corrective measure. The Permittee shall consider the following operation and maintenance cost components:

a. Operating labor costs: Wages, salaries, training, overhead, and fringe benefits associated with the labor needed for post-construction operations;

b. Maintenance materials and labor costs: Costs for labor, parts, and other resources required for routine maintenance of facilities and equipment;

c. Auxiliary materials and energy: Costs of such items as chemicals and electricity for treatment plant operations, water and sewer service, and fuel;

d. Purchased services: Sampling costs, laboratory fees, and professional fees for which the need can be predicted;

e. Disposal and treatment costs: Costs of transporting, treating, and disposing of waste materials, such as treatment plant residues, generated during operations;

f. Administrative costs: Costs associated with administration of corrective measure operation and maintenance not included under other categories;

g. Insurance, taxes, and licensing costs: Costs of such items as liability and sudden accidental insurance; real estate taxes on purchased land or rights-of-way; licensing fees for certain technologies; and permit renewal and reporting costs;

h. Maintenance reserve and contingency funds: Annual payments into escrow funds to cover, (1) costs of anticipated replacement or rebuilding of equipment, and (2) any large unanticipated operation and maintenance costs; and

i. Other costs: Items that do not fit any of the above categories.

TASK X: JUSTIFICATION AND RECOMMENDATION OF THE CORRECTIVE MEASURE OR MEASURES

The Permittee shall justify and recommend a corrective measure alternative using technical, human health, and environmental criteria. This recommendation shall include summary tables which allow the alternative or alternatives to be understood easily. Tradeoffs among health risks, environmental effects, and other pertinent factors shall be highlighted. The U.S. EPA will select the corrective measure alternative or alternatives to be implemented based on the results of Tasks VII through IX. At a minimum, the following criteria will be used to justify the final corrective measure or measures.

A. Technical

1. Performance - corrective measure or measures which are most effective at performing their intended functions and maintaining the performance over extended periods of time will be given preference.

2. Reliability - corrective measure or measures which do not require frequent or complex operation and maintenance activities and that have proven effective under waste and facility conditions similar to those anticipated will be given preference.

3. Implementability - corrective measure or measures which can be constructed and operated to reduce levels of contamination to attain or exceed applicable standards in the shortest period of time will be preferred.

4. Safety - corrective measure or measures which pose the least threat to the safety of nearby residents and environments as well as workers during implementation will be preferred.

B. Human Health

The corrective measure or measures must comply with existing U.S. EPA criteria, standards, or guidelines for the protection of human health. Corrective measures which provide the minimum level of exposure to contaminants and the maximum reduction in exposure with time are preferred.

C. Environmental

The corrective measure or measures posing the least adverse impact (or greatest improvement) over the shortest period of time on the environment will be favored.

TASK XI: REPORTS

The Permittee shall prepare a CMS Report presenting the results of Tasks VII through X and recommending a corrective measure alternative. Three copies of the preliminary report shall be provided by the Permittee.

A. Progress

The Permittee shall at a minimum provide the U.S. EPA with signed, bimonthly progress reports containing:

1. A description and estimate of the percentage of the CMS completed;

2. Summaries of all findings;

3. Summaries of all changes made in the CMS during the reporting period;

4. Summaries of all contacts with representatives of the local community, public interest groups or State government during the reporting period;

5. Summaries of all problems or potential problems encountered during the reporting period;

6. Actions being taken to rectify problems;

7. Changes in personnel during reporting period;

8. Projected work for the next reporting period; and

9. Copies of daily reports, inspection reports, laboratory/monitoring data, etc.

B. Draft

The Report shall at a minimum include:

1. A description of the facility which includes;

   a. Site topographic map (which includes depiction of plant communities, and fish and wildlife habitats) and preliminary layouts.

2. A summary of the corrective measure or measures;

   a. Description of the corrective measure or measures and rationale for selection;

b. Performance expectations;

c. Preliminary design criteria and rationale;

d. General operation and maintenance requirements; and

e. Long-term monitoring requirements to assess attainment of goals relative to groundwater, surface waters, and ecological integrity (ecological monitoring, where applicable, could include assessment of wetland vegetation; soils and hydrology; biotoxicity of surface waters, soils and/or sediments; analysis of biological tissues; and assessment of stream fish and benthic macroinvertebrate communities).

3. A summary of the RFI and impact on the selected corrective measure or measures which includes;

a. Field studies (groundwater, surface water, soil, air); and

b. Laboratory studies (bench scale, pick scale).

4. Design and Implementation Precautions which include;

a. Special technical problems;

b. Additional engineering data required;

c. Permits and regulatory requirements;

d. Access, easements, rights-of-way;

e. Health and safety requirements; and

f. Community relations activities.

5. Cost Estimates and Schedules which include;

a. Capital cost estimate;

b. Operation and maintenance cost estimate; and

c. Project schedule (design, construction, operation).

Three copies of the draft report shall be provided by the Permittee to the U.S. EPA and the MDNR.

C. Final

The Permittee shall finalize the CMS Report incorporating comments received from the U.S. EPA on the Draft CMS Report.

ATTACHMENT H
CORRECTIVE ACTION SCHEDULE OF COMPLIANCE

CORRECTIVE ACTION SCHEDULE OF COMPLIANCE

A. PURPOSE

This Corrective Action Plan Schedule of Compliance has been compiled in order to clearly outline the tasks and completion deadlines contained as part of the corrective action requirements found in Part I.J.4 and in Attachments E, F and G of this permit. This schedule of compliance contains only those tasks, reports, monitoring requirements and deadlines associated with the corrective action requirements. It does not contain any other tasks, reports, monitoring requirements or deadlines regarding the operating, testing, monitoring, closure or post-closure of the Class I underground injection well.

B. SCHEDULE OF COMPLIANCE

1. Newly Identified SWMUs or Releases

Facility Submission	Due Date
Information on any newly discovered SWMU	Within 30 calendar days of discovery
Information on any release from a new or existing SWMU	Within 30 calendar days of discovery
RFI Release Assessment Work Plan for newly identified SWMUs and releases	Within 60 calendar days after written notification by the Regional Administrator

2. Corrective Action for Existing SWMUs and Releases

a. RCRA Facility Investigation (RFI) Release Assessment

Facility Submission	Due Date
RFI Release Assessment Work Plan	Within 120 calendar days after the effective date of this permit modification
Submit revised/modified RFI Release Assessment Work Plan	Within 60 calendar days of receipt of Regional Administrator's comment(s)
Implementation of the RFI Release Assessment Work Plan	Within 30 calendar days of the Regional Administrator's written approval of the RFI Release Assessment Work Plan

RFI Release Assessment Final Report	Within 60 calendar days after the completion of the RFI Release Assessment
Progress reports on RFI Release Assessment activities	Submitted bimonthly

b. RCRA Facility Investigation (RFI)

Facility Submission	Due Date
RFI Work Plan	Within 120 calendar days after receipt of EPA's approval of the RFI Release Assessment Final Report
Submit revised/modified RFI Work Plan	Within 60 calendar days of receipt of Regional Administrator's comment(s)
Implementation of the RFI Work Plan	Within 30 calendar days of the Regional Administrator's written approval of the RFI Work Plan
RFI Final Report	Within 60 calendar days after the completion of the RFI
Progress reports on RFI activities	Submitted bimonthly

c. Corrective Measures Study (CMS) (Attachment G)

Facility Submission	Due Date
CMS Plan	Within 120 calendar days of the notification of the requirement
Submit modified/revised CMS Plan	Within 60 calendar days of receipt of Regional Administrator's Comment(s)
Implementation of the CMS Plan	Within 30 calendar days of the Regional Administrator's written approval of the CMS Plan
CMS Final Report	Within 60 calendar days after the completion of the

CMS

Progress reports on CMS activities	Submitted bimonthly

d. Corrective Measure Implementation (CMI)

Facility Submission	Due Date
CMI Program Plans	Within 120 calendar days of the notification of the requirement
Submit modified/revised CMI Program Plans	Within 60 calendar days of receipt of Regional Administrator's comments
Design Phases -Preliminary Design (30% complete)	Within 90 calendar days of Regional Administrator's written approval of Final Program Plans
-Intermediate Design (60% complete)	Within 180 calendar days of submittal of Final Program Plans
-Pre-Final Design (95% complete)	Within 270 calendar days of submittal of Final Program Plans
-Final Design (100% complete)	Within 60 calendar days of submittal of Pre-Final Design Program Plans
Operation and Maintenance Plan, Cost Estimate, Project Schedule, Construction Quality Assurance Objectives, and Health and Safety Plan - Draft Submittals	Concurrent with Pre-Design
Operation and Maintenance Plan, Cost Estimate, Project Schedule, Construction Quality Assurance Objectives, and Health and Safety Plan - Final Submittals	Concurrent with Final Design
Additional Studies: Draft Report	(Date established prior to Final Design)
Additional Studies: Final Report	Within 60 calendar days of receipt of comments from the

	Regional administrator on Draft Report
Draft Construction Quality Assurance Plan	Prior to construction
Final Construction Quality Assurance Plan	Within 60 calendar days of receipt of Regional Administrator's comments on Draft Construction Quality Assurance Plan
Construction of Corrective Measure(s)	As approved in Final Design
Completion of Construction	As approved by the Regional Administrator in the Corrective Measure Design
Draft CMI Report	Within 60 calendar days of completion of construction phase
Final CMI Report	Within 60 calendar days of receipt of comments from the Regional Administrator on Draft CMI Report
Progress Reports for Design and Construction	Monthly
Progress Reports During Operation and Maintenance	Semi-Annual